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TEXT BOOK
OF
HARMONY
FOR
SCHOOLS & STUDENTS

CHARLES EDWARD TOWNE





A TEXT BOOK OF HARMONY.

LONDON:
GILBERT AND RIVINGTON, PRINTERS,
ST. JOHN'S SQUARE.

A TEXT BOOK OF HARMONY:

FOR THE USE OF

Schools and Students.

By CHARLES EDWARD HORSLEY.



London:
SAMPSON LOW, MARSTON, SEARLE, & RIVINGTON,
CROWN BUILDINGS, 188, FLEET STREET.
1876.

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THIS WORK IS

Dedicated to the Memory

OF

WILLIAM HORSLEY, Mus. Bac. Oxon.,

AND

ELIZABETH HUTCHINS HORSLEY,

BY THEIR SON,

THE AUTHOR.

January 12, 1876.

PREFACE.

THE Theory of Music is divided into two branches. The first relates to the nature of sound, and is generally called Acoustics; the second is practical Harmony, or the Grammar of the art of Composition. Many works written on Harmony endeavour to combine these two branches, but it seems to me that the explanation of Acoustics has nothing whatever to do with Intervals, the Scale, or the Triad, with its additions, transpositions, inversions, &c.; and that the combination of the two branches only tends to confuse the Student and to draw his attention from that study of Harmony, which alone can enable him to write his music correctly, and to become a composer. In this work I have left Acoustics (except in one point, the Enharmonic Scale) entirely alone. To those interested in the

subject there are, for study and information, the lectures of Tyndall and the work of Helmholtz—both exhaustive and admirable expositions of the generation of sound. This part of Musical Theory belongs to the Mathematics of Music. I am not aware that great dramatists, poets, and literary men generally, studied the origin of their respective languages, but they learned their grammar, and wrote down their inspirations according to grammatical laws; and in Music I am sure that Bach, Handel, Mozart, Beethoven, and all the great composers never troubled themselves about the length of a string, or the number of vibrations necessary at a given tension to produce a sound called C, or any other sound, but they concerned themselves with the compound studies of Intervals, the construction of the Triad, its additions, inversions, suspensions, &c., and thus clothed their ideas with the fitting Harmony they will always retain.

The story of Harmony is the simplest imaginable, six sounds comprise its utmost theoretical limit.

I purpose to tell this story in a very simple manner, and if I succeed in placing before my readers a practicable, easy, and pleasing form of analyzing the works of great musicians, and of

enabling Students to write down their ideas in a musically grammatical shape, the experience gained by twenty years of study, during thirty years of teaching, will not have been in vain.

C. E. H.

January 12th, 1876.

BIOGRAPHICAL NOTE.

CHARLES EDWARD HORSLEY was the youngest son of that eminent and truly English musician William Horsley, Mus. Bac., Oxon. He evinced at a very early age strong musical talent, which was greatly developed by a long residence in Germany, where he was the pupil and friend of Spohr, Mendelssohn, and Hauptmann. He was the author of many admirable compositions, which all showed the thorough musical training he had received from his father and others, and he was always desirous to put the great theoretical knowledge he possessed in a popular form for the instruction of others. Hence the work now published, which he had completed only a short time previous to his death, which took place in New York, where and in Australia, he had resided for several of the latter years of his life. He was born in London in 1822, and died in 1876.

PART I.

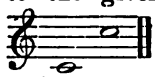
CHAPTER I.

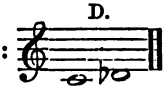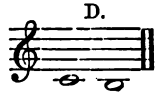
INTERVALS.

A complete knowledge of intervals is the basis of Harmony. An interval is the distance between one given sound and that which either follows or is heard simultaneously with it.

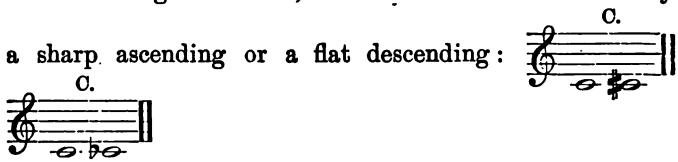
The smallest interval on which Harmony is based for practical use is a semitone.

Semitones are either Chromatic or Diatonic.

In this work all intervals will be calculated from and to the given sounds C C (or, in musical notation, ), and the component parts of each interval will be expressed in semitones.

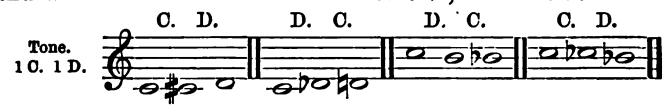
1. The *Diatonic Semitone* is formed by raising or lowering C one sound to D♭, or one sound to B:   thereby altering the name of the sound and its position on the staff.

The *Chromatic Semitone* is formed by *retaining* the name of the given sound, which is raised and lowered by a sharp ascending or a flat descending:
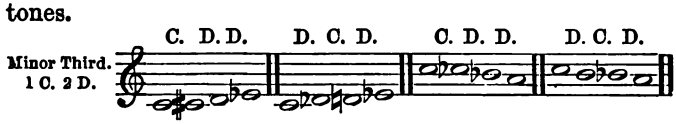


It will thus be seen that theoretically there is a wide difference in the constitution of these semitones, and the great importance of this difference will be found when the study of combined sounds, or Harmony, is reached.
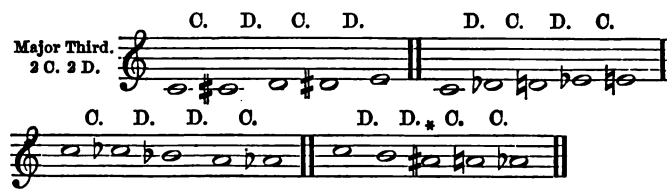
2. The next interval to these semitones is a *Tone*, and consists of two semitones, one *Diatonic*, and one *Chromatic*, and is expressed either ascending or descending, and with either semitone first or second, as follows:—



3. A *Minor Third* is formed by adding one diatonic semitone to the *Tone*, either ascending or descending, thus containing two diatonic and one chromatic semitones.
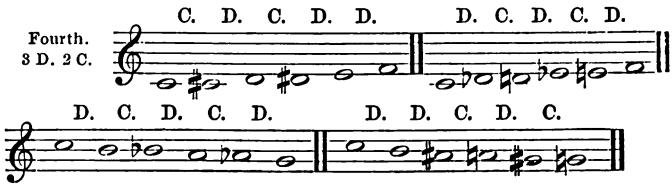


4. A *Major Third* has an additional *chromatic* semitone added to the last sound of the Minor Third, and consists of two chromatic and two diatonic semitones.



(N.B.—The sound marked * is written as A ♯, to show that such a notation might be used; but as a general rule, and for uniformity, it would be advisable that the chromatic semitone B ♭ should be used in writing this interval descending.)

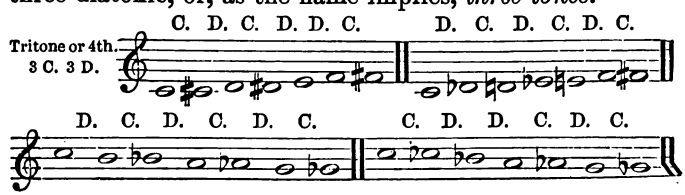
5. A *Fourth* receives the addition of a diatonic semitone to the Major Third, and contains three diatonic and two chromatic semitones.



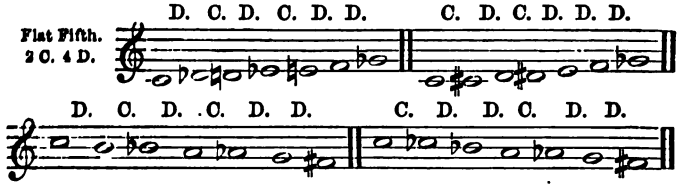
(N.B.—The remarks in the above note do not apply here, as uniformity is preserved and a legitimate notation employed.)

6. The *Tritone*, or Sharp Fourth, is an interval of the very greatest importance in Harmony, and although strictly it should be included in the extreme sharp or chromatic interval, which will be explained at the end of this chapter, yet I have, after a long experience, found it advisable, both as regards itself and the next following interval, to reckon it among those which, from their containing more diatonic than chromatic semitones, are called after the former name.
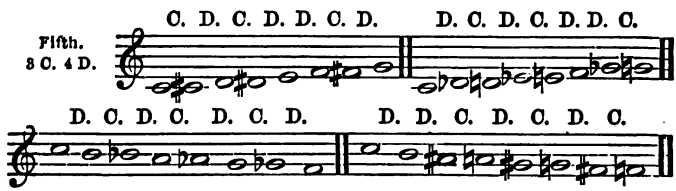
A *Tritone* contains six semitones, three chromatic and three diatonic, or, as the name implies, *three tones*.
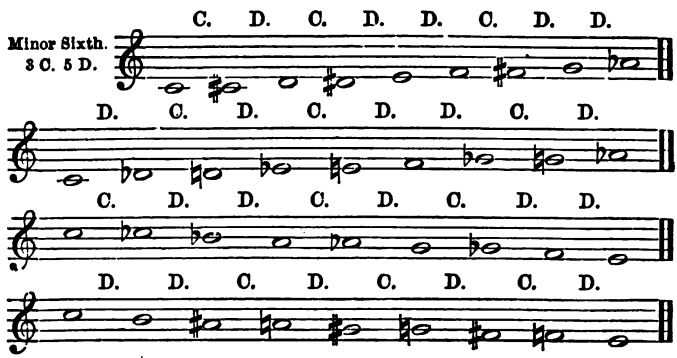


7. A *Flat Fifth* is an interval quite as important in its harmonic usefulness as the Tritone, and its formation must be carefully explained. Like the Tritone, it contains six semitones, but *two* only are chromatic, and four diatonic.



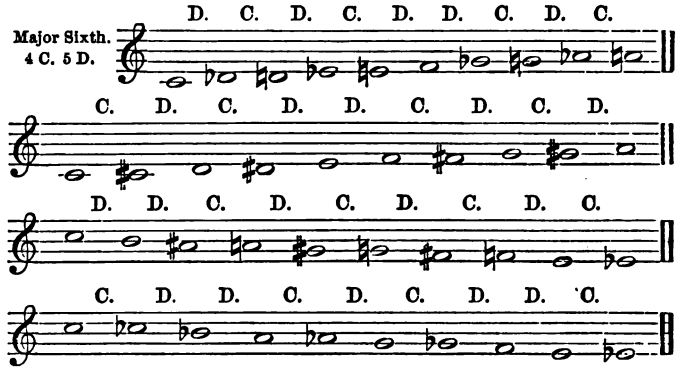
8. *Fifth.*—By the addition of one diatonic semitone to the Tritone, or one chromatic semitone to the Flat Fifth, the interval of the Fifth is formed, and contains three chromatic and four diatonic semitones.
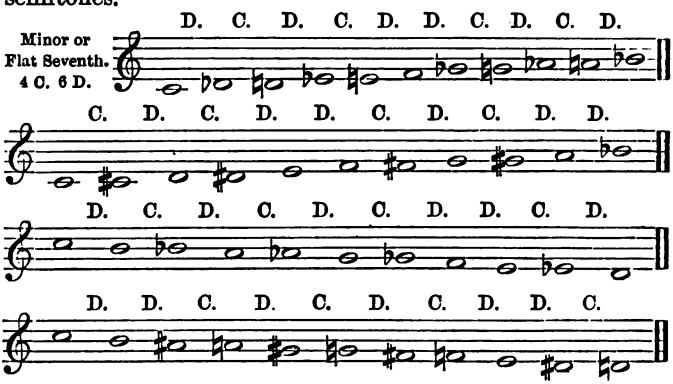


9. *Minor Sixth.*—One diatonic semitone added to the Fifth forms the interval of a Minor Sixth, which contains five diatonic and three chromatic semitones.



10. *Major Sixth.*—The addition of one chromatic semitone to the foregoing Minor Sixth forms the Major Sixth, with four chromatic and five diatonic semitones.
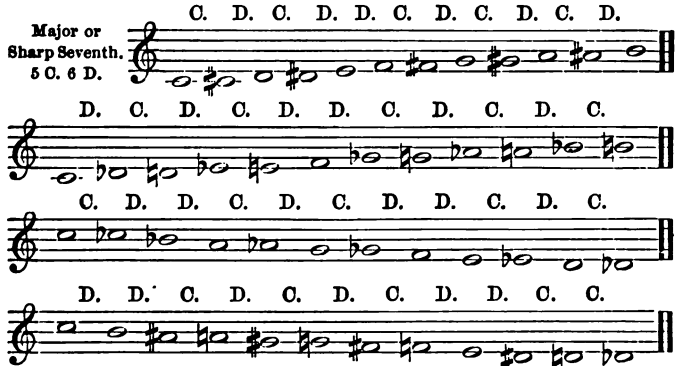


11. *Minor or Flat Seventh.*—One diatonic semitone added to the Major Sixth forms the interval of the Minor or Flat Seventh, containing six diatonic and four chromatic semitones.
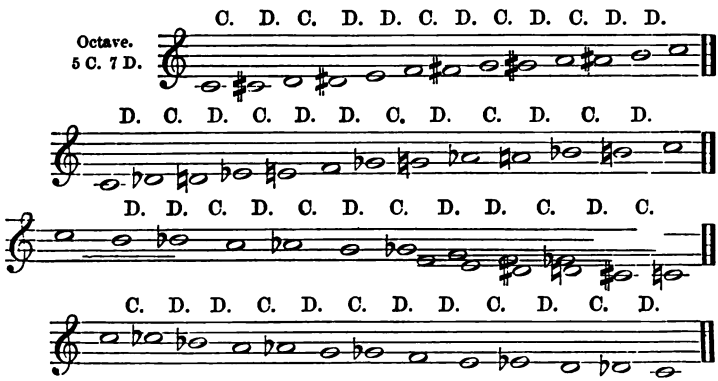


12. *Major or Sharp Seventh.*—One chromatic semitone *more* than the Minor or Flat Seventh is contained in the Sharp Seventh. It is an interval which is rarely used in

Harmony, for reasons which will be explained hereafter. It consists of five chromatic and six diatonic semitones.



The descending interval of the Sharp Seventh is given here, to show that it can be theoretically formed, but it is very seldom used in practice.

13. The *Octave* contains twelve semitones—seven diatonic and five chromatic.



14. The Octave being the last of the diatonic intervals, it will be useful to form a table of them, with their respective semitones :—

	Diatonic Semitones.	Chromatic Semitones.
Tone	1 ...	1
Minor Third	2 ...	1
Major Third	2 ...	2
Fourth	3 ...	2
Sharp Fourth (Tritone)	3 ...	3
Flat Fifth	4 ...	2
Fifth	4 ...	3
Minor Sixth	5 ...	3
Major Sixth	5 ...	4
Flat or Minor Seventh ...	6 ...	4
Major Seventh... ...	6 ...	5
Octave	7 ...	5

15. Intervals are divided into two classes, Consonant and Dissonant. These names sufficiently explain their signification.

Consonant Intervals are:

Thirds, Major and Minor	Sixths, Major and Minor
Fifths	Octaves.

Dissonant Intervals are:

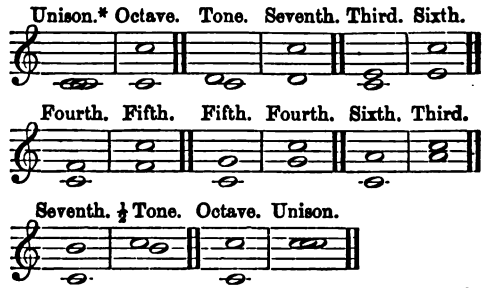
Tones	Flat Fifths
Fourths *	Sevenths, Major and Minor
Sharp Fourths	

16. Intervals are inverted by the lowest sound becoming the highest, and the highest sound becoming the lowest.

Thus, taking the intervals (omitting the semitones) at eight degrees, we have this result:—

* With regard to the *Fourth*, it has been the subject of much discussion as to whether it should be placed among the Consonant or Dissonant intervals. My own opinion is that it may be considered as both; namely, Consonant when placed among the other intervals, and Dissonant when it is used as a suspension, the explanation of which term will also be given hereafter.
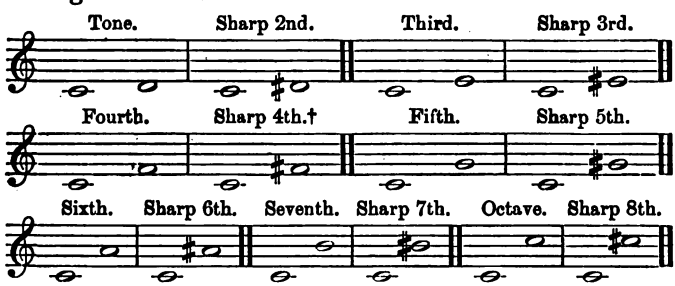
1 8
2 . . . 7
3 6
4 . . . 5 or
5 4
6 . . . 3
7 2
8 . . . 1



One important result of the inversion of intervals is that, when inverted, all major intervals become minor, and all minor intervals become major.

Thus, a Tone becomes a Flat Seventh,
a Third „ Minor Sixth,
a Fourth „ Major Fifth,
a Fifth „ Fourth,
a Sixth „ Minor Third,
a Flat Seventh „ Tone,
an Octave „ Unison.

17. *Chromatic or Extreme Intervals* are formed by raising each diatonic interval one chromatic semitone.

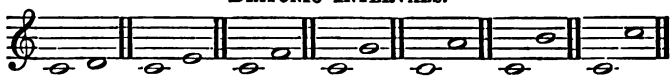


* The Unison, or doubling of the sound, can hardly be considered as an interval, but it is necessary to exhibit it here, on account of its becoming on inversion an octave.

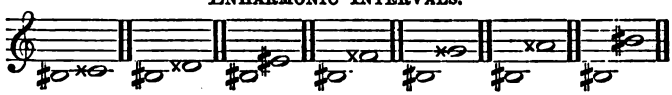
† Refer to Paragraph 6 for an explanation of this interval.

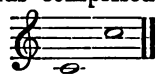
18. *Enharmonic Intervals* are formed by the use of the *Diesis*, or quarter-tone. The word is Greek, and in this connection is used to express the division of two sounds into a less quantity than a semitone. The ear cannot distinguish the difference, although, mathematically or acoustically, a difference doubtless exists, but the practical effect, and its great use in musical notation, may be illustrated thus:—

DIATONIC INTERVALS.



ENHARMONIC INTERVALS.



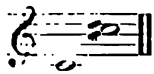
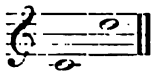
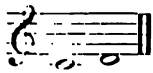
19. As an exercise on the foregoing explanation of the formation and component parts of intervals, it will be advisable for the student to make himself thoroughly acquainted with these by writing out every class of interval: diatonic, chromatic (extreme), and enharmonic, with the inversions, commencing on all sounds comprised within the limits of the octave C—C, or  In so doing he will arrive at the certainty that there are only twelve intervals used in Harmony, and that all others are merely transpositions of the first, reckoned from other sounds than C; thus,

C to E is a Major Third,

D to F♯ is a Major Third.

As the number of diatonic and chromatic semitones in both intervals is the same, it follows that the one is a simple transposition of the other.

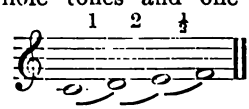
20. As the study of Harmony includes the chord of the

ninth, no interval beyond that of the extreme octave, or C to C♯  can be recognised in this work, for the ninth or  is really only the repetition of the tone  the second sound being nine degrees higher than the lowest.

CHAPTER II.

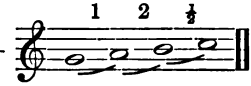
THE MAJOR AND MINOR SCALES.

1. A *Scale* is a succession of tones and diatonic semitones divided into two parts, each part between the extremes forming the interval of a fourth, and, therefore, containing three diatonic and two chromatic semitones, or two whole tones and one diatonic semitone:

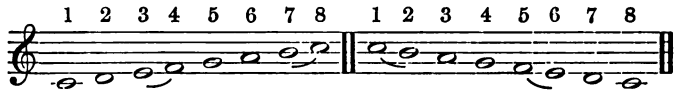


The above example shows the first division of the normal and, theoretically speaking, *only* scale in Harmony. The other scales used in musical composition are simple transpositions of this; the minor scales, only differing from the major by the place of the semitones in each division, cannot be considered but as a repetition of the original or normal scale.

In order to complete the scale by the addition of the second part, it is necessary to commence on the tone immediately above the final sound of the first part. This is called the *Tone of Disjunction*, and by its use the second

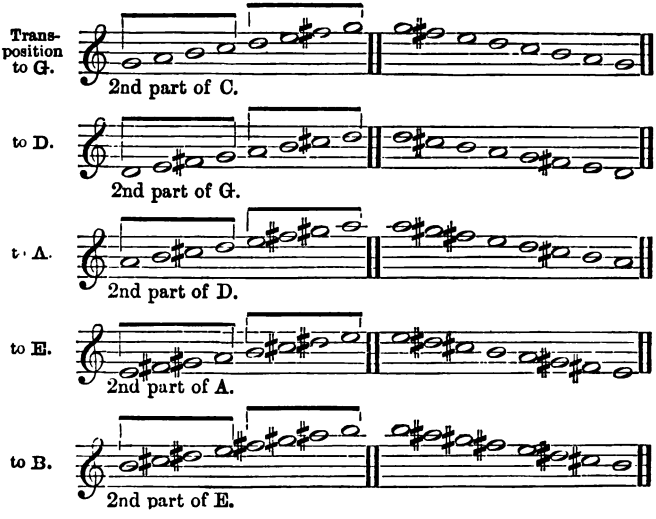
half of the scale is formed—  making
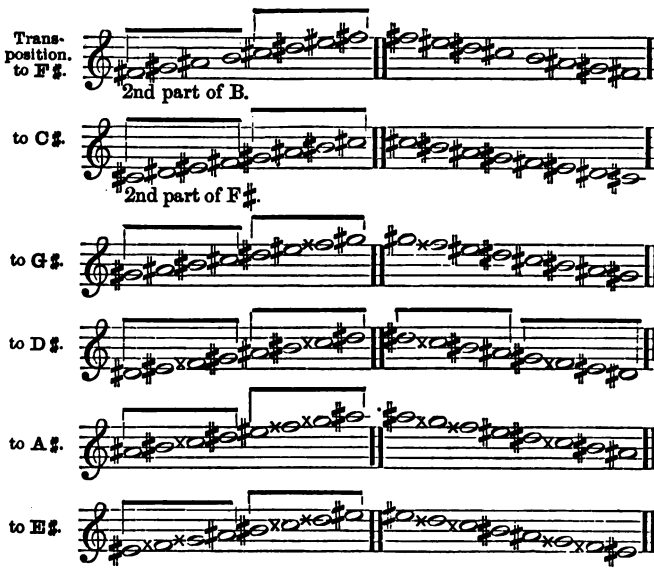
the complete scale, ascending and descending,
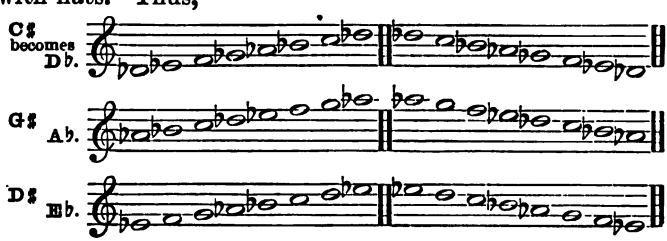


Considering, therefore, the eight sounds which form this scale of C as degrees or numbers, it will be seen that the diatonic semitone *ascending* is to be found between the 3rd and 4th, and 7th and 8th degrees, and, *descending*, between the 1st and 2nd, and 5th and 6th degrees.
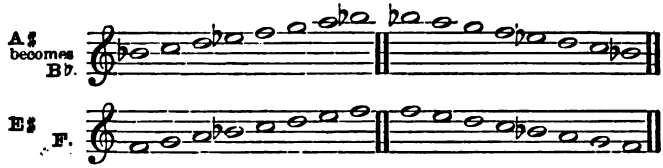
2. The order in which the transpositions of this scale follow each other is arrived at by taking the second part of the normal scale as the first part of the first transposition; and in forming the second part, commencing after the tone of disjunction, and adding two tones and a diatonic semitone.



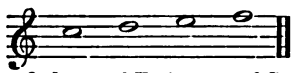


The last five of these transpositions of the normal scale C are here purposely written with sharps and double sharps, to show the theoretical correctness of my argument (see paragraph 1 of this chapter). Practically, however, it would (if not absolutely impossible) be needlessly difficult to use these scales in their entirety for a musical composition. To simplify this difficulty, the enharmonic principle is generally adopted, and these scales are invariably written with flats. Thus,



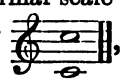


It will be seen that the second part of the transposition to F will cause the return to the normal scale C; for by the addition of the second part, this result is obtained:—



2nd part of F. 1st part of C.

There is, therefore, *One Scale*—C—and eleven transpositions of it, corresponding to the twelve intervals explained in Chapter I., paragraph 14.
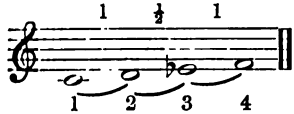
Transpositions of the normal scale can be formed on all sounds within the limits of , the order being:—

C	C♯ (D♭)
G	G♯ (A♭)
D	D♯ (E♭)
A	A♯ (B♭)
E	E♯ (F)
B	B♯ (C)
F♯	

These transpositions follow each other at an interval of a fifth, for the reason that the second part commences (after the tone of disjunction) one fifth from the beginning of each transposition.

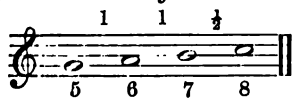
3. *The Minor Scale* is formed on the same principle as the Major Scale, but the diatonic semitones occurring between different degrees ascending and descending, a complete change in sound is produced.

The first part of the Minor Scale is formed thus:—

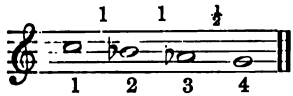


The distance of a fourth between the extreme parts (as in the Major Scale) is here shown, but the diatonic semitone occurring between the 2nd and 3rd degrees, which form the interval of a minor third from the commencing sound, gives the scale both its name *Minor*, and its distinctive mournful character.
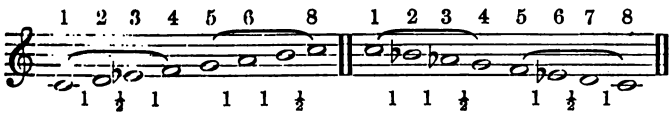
The second part of the ascending Minor Scale is formed in the same way as in the Major Scale:—



In the descending Minor Scale, another change in the placing of the diatonic semitone is made in the first part:

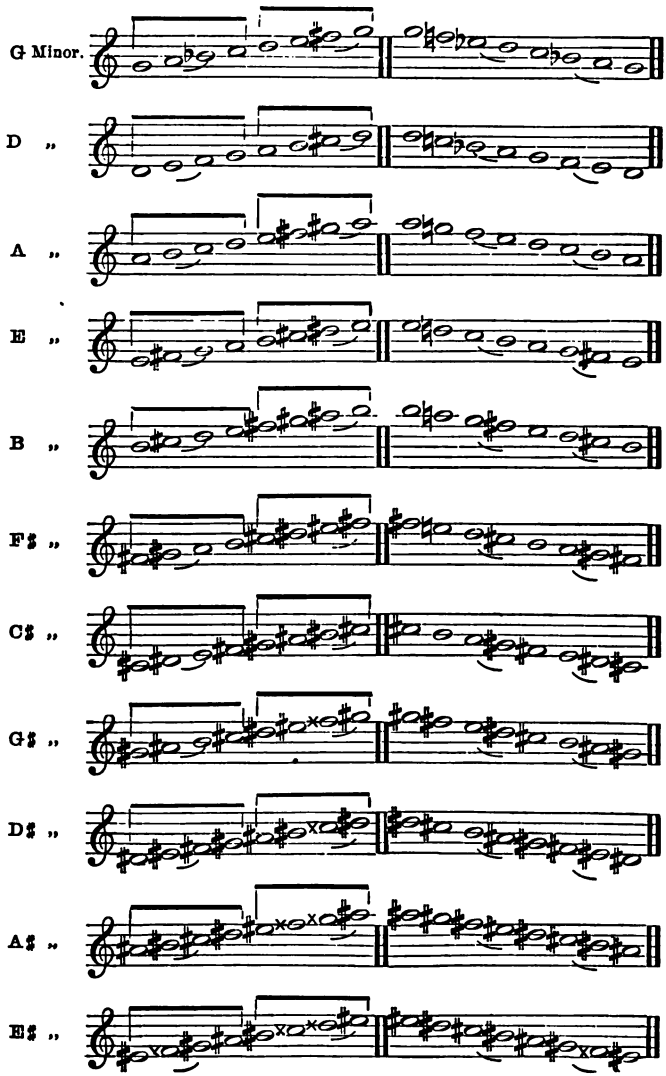


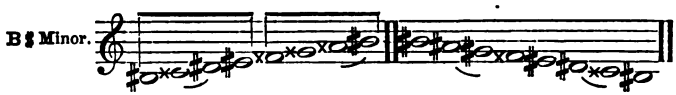
the second part remaining as in the ascending scale, making the complete scale ascending and descending—



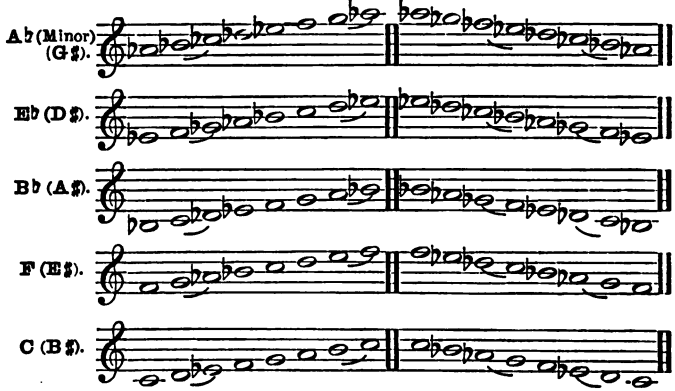
In this Minor Scale, therefore, the semitones of each part are found between the 2nd and 3rd, and 7th and 8th degrees ascending, and between the 3rd and 4th, and 6th and 7th degrees descending.

The order of transposition of the Minor Scale is the same as the Major, but the first part has to be altered in respect of the place of the diatonic semitone.

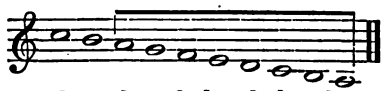

G Minor.
D „
A „
E „
B „
F♯ „
C♯ „
G♯ „
D♯ „
A♯ „
E♯ „



As in the Major Scale, the transpositions from G♯ Minor to B♯ Minor will be considered, in practice, enharmonically, and used as follows:—



The order in which the transpositions of the Minor Scale follow each other can also be considered by the method termed RELATIVE. If to the descending normal scale C there be added to the last two sounds B and A



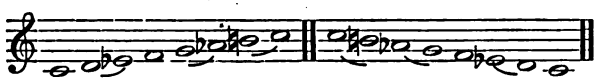
it will be seen that the whole of the descending Minor Scale of A is included between the sign ⌐¬ therefore A Minor is the relative minor to C Major, and takes its signature.

This rule is to be followed in the eleven transpositions of the scale of A Minor, and will be observed by considering the first sound of the relative minor as a minor third below, or a major sixth above, the first sound of each major transposition.

The following table will show this :—

C	...	Relative Minor		A
G	...	„	„	E
D	...	„	„	B
A	...	„	„	F♯
E	...	„	„	C♯
B	...	„	„	G♯
F♯	...	„	„	D♯
C♯	...	„	„	A♯
A♭	...	„	„	F
E♭	...	„	„	C
B♭	...	„	„	G
F	...	„	„	D

4. *The Melodic Minor Scale.*—Since the beginning of the present century several learned musical theoreticians have written treatises on a form of the Minor Scale differently constructed from that explained above. The object of this discussion has been so to form the second part of the Minor Scale that in the diatonic semitone it shall be similar, both ascending and descending, thus:—



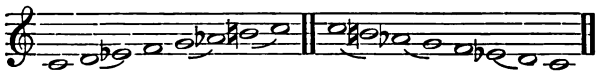
I call this the *Melodic* Minor Scale * because it is more melodious to the ear, descending, than the usual minor form; and those who are acquainted with the national airs of Ireland, Scotland, and the northern nations of Europe, will constantly find this form of minor scale employed; and as these airs are strictly national, inasmuch as, with very few exceptions, their origin and their authors are entirely unknown, it follows that there is very great reason

* By many theorists this scale is termed the "Harmonic Scale." I prefer the title I have adopted.
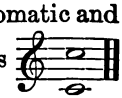
for the occasional use, if not general adoption of this form of scale as a *melodic* or tuneful progression, for it is highly effective in giving a mournful tint to sad feelings expressed by music.

Theoretically, this scale cannot be justified, and for a very simple reason: the scale in its major and minor forms must consist of two tones and one diatonic semitone in each part.

Now, the distance of sound between A♭ and B ♮ ascending, and between B ♮ and A♭ descending, is an extreme sharp second, and, therefore, a chromatic semitone more than a tone.

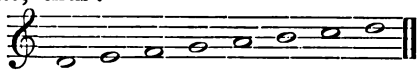


However beautiful the Melodic Minor Scale is for some purposes, yet the whole theory of the Diatonic Scale in its minor form would be destroyed if the melodic form were admitted as part of this theory, or as anything but an ingenious, though fundamentally incorrect attempt to assimilate the second part of the minor scale with the second part of the major, as regards the semitones, or to make the descending minor scale in its first part similar to the second part of the ascending scale. Another reason for excluding this Melodic Scale from the theory of music, is, that it will be found on examination that it contains three diatonic semitones ascending and descending, a fact quite sufficient to exclude it from consideration, for were it viewed in any other light than that which I have explained and justified, the whole theory and uniformity of scale-formation would fall to the ground, as regards the minor mode.

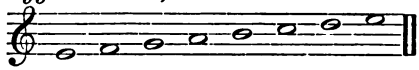
5. The *Chromatic Scale* is a succession of chromatic and diatonic semitones contained between the sounds 

and being uniform, ascending and descending, no further explanation of its construction is needed.

6. Before quitting this branch of my work, it should be stated that there are, or rather have been, various other modes of writing scales, especially in ancient music—if, indeed, such music was anything like that of the present time. The Greeks are known to have used the *Doric Scale*, thus:—



and the *Phrygian Scale*, thus:—



and the Jews, in their religious ceremonies, used melodies which must have been formed by tones and semitones; but as this work is not a History of Music, but an explanation of its theory, it is only necessary to say that all other scales except the Major and Minor Diatonic forms here explained, are now obsolete and useless for the purposes of modern music; and as the Diatonic Scale was finally settled and the sounds given their existing names by the inventor of the system, Guido D'Arezzo,* born in Ferara about A.D. 1000 to 1060 (the exact date is not known), and as this system has served all musical composers with the means of expressing their ideas for nearly nine centuries, there is no necessity for exchanging a perfectly tried and universally-accepted theory with new-fangled ideas, which only confuse the mind, and lead to no useful results.

* This is an historical assertion doubted by many writers. I insert it on the authority of most cyclopædias and biographies of music and musicians. Somebody must have invented the form of scale so long in use, and therefore the above author may as well have the credit of the boon he has conferred as anyone else, in all probability less entitled to the distinction.

PART II.

CHAPTER I.

HARMONY.
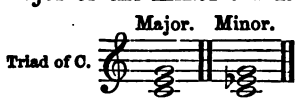
The Chord of the Triad, with its Inversions.

1. A given sound combined with its major or minor third and perfect fifth forms the normal chord in harmony, and from its consisting of three sounds receives the name of the Triad.

The chord is the foundation of all harmony, and the parent, so to speak, of the endless variety of inversions and transpositions which are employed in musical composition, and, therefore, make music.

2. As there is but one scale, so there is but one triad, with transpositions corresponding to those of the scale, in number twenty-four—twelve with the major third, and twelve with the minor third.
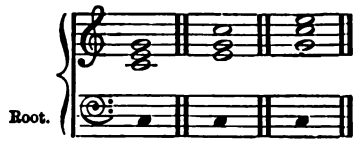
The *Normal Triad*, like the normal scale, is that of C, with either the major or the minor third.



3. The sound upon which the triad is formed is termed the *root*, and from this root the triad itself and the additions to it are calculated.

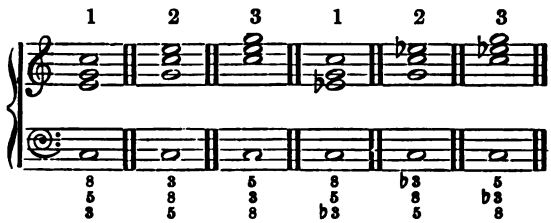
4. The triad containing three sounds, it can be placed

in three different forms, which are called positions, thus:—



In this example it will be observed that the root is doubled, and, therefore, that four sounds appear, but on referring to the upper staff, it will be evident that the only reasons for this are to show—first, the three positions of the triad theoretically; and secondly, to render the harmony fuller by the addition of the octave to the root, thereby not adding a new sound, but merely repeating in the octave the sound from which the chord is derived.

5. Practically the three positions of the triad are formed thus:—



Thus, the triad, with the addition of the octave to the root, consists of the root itself, its third, fifth, and octave in the first position; its fifth, octave, and third in the second position; and the octave, third, and fifth in the third position.

The *Minor Triad*, it will be seen, is the same as the Major Triad in the positions, but the *third* being minor, the sign ♭ must be added to the figure to prevent the major third being used.

6. The student will now for the first time become aware of the reason why I have dwelt so largely upon the component parts or formation of intervals.
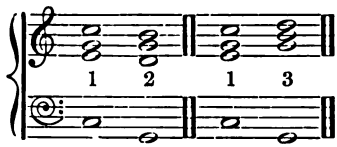
In the early days of the great, or, indeed, of any composers, figures were almost constantly used instead of notes. These figures had exclusive reference to the intervals which formed the chords used. Even now, in Italy, figures are invariably employed in recitatives and other numbers of an opera, oratorio, cantata, &c., which are not accompanied by the orchestra; and were a music director to sit down to a piano without knowing the meaning of the figures he would see placed over the bass notes, thereby proving his ignorance of intervals, he would find himself very short of being acquainted with a most essential mode of fulfilling the first duties of his office.

At the present time, with the exception mentioned above, the practice of using figures to represent intervals has become nearly obsolete in England, France, and Germany, probably owing to the apparently intricate nature of modern harmony; but when it is considered that the most remarkable chords used by such men as Bach, Beethoven, Mozart, Spohr, Mendelssohn, Weber, Meyerbeer, Wagner, &c., *all and every one of them* have their origin and can be reduced to the simple triad of an $\frac{8}{5}_{3}$ formed on their root, it will be evident that if the use of figures has given place to the use of notes representing those figures, the strict knowledge of intervals, whether expressed by figures or notes, is, as I have said, the foundation and basis of all harmony.
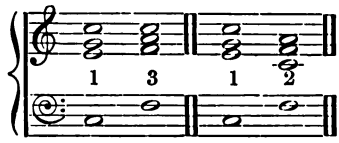
7. The use of these three positions of the triad can be further illustrated by a few examples of transposition.

Thus, the first position of the triad of C can be followed by:

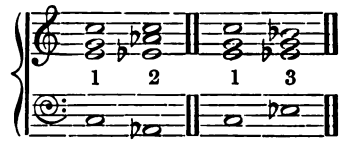
1st pos. of C to 2nd of G.
1st „ „ 3rd „
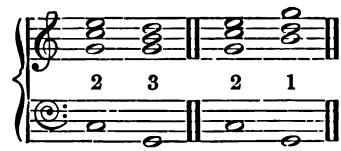


1st pos. of C to 3rd of F.
1st „ „ 2nd „
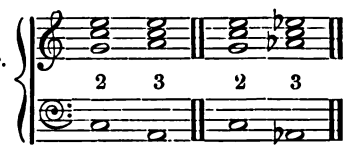


1st pos. of C to 2nd of A♭.
1st „ „ 3rd of E♭.
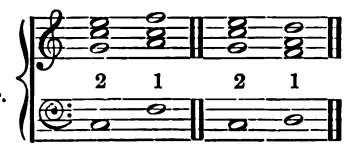


2nd pos. of C to 3rd of G.
2nd „ „ 1st „
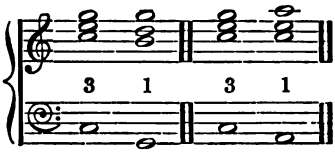


2nd pos. of C to 3rd of A Minor.
2nd „ „ 3rd of A♭.
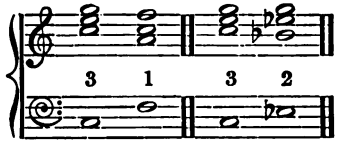


2nd pos. of C to 1st of F.
2nd „ „ 1st of D Minor.
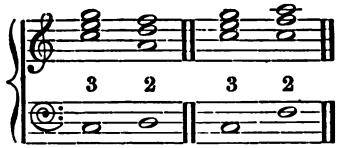


3rd pos. of C to 1st of G.
3rd „ „ 1st of A Minor.



3rd pos. of C to 1st of F.
3rd „ „ 2nd of E♭.



3rd pos. of C to 2nd of D Minor.
3rd „ „ 2nd of F.

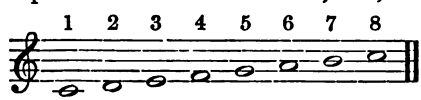


These examples are hardly more than indications of what may be done in the use of triads in their different positions, but a useful exercise can be written by the student in the transposition of these. In doing so, he will arrive at the first step in modulation, which is the art of proceeding from one transposition to another of the sounds forming the normal triad.

8. On examining the normal scale, it will be seen that several triads can be formed from it, all bearing relation to each other; the term relation being used to express sounds in common.

Thus C belongs to its own triad C E G, and is also the fifth of the transposition to the triad of F, &c., &c.

Scale of C.



The first, third, and fifth degrees form the triad of C.

The second, fifth, and seventh degrees form the triad of G.

The fourth, sixth, and eighth degrees form the triad of F.

The third, sixth, and eighth degrees form the triad of A Minor.

The second, fourth, and sixth degrees form the triad of D Minor.

The third, fifth, and seventh degrees form the triad of E Minor.

9. Six triads can thus be formed from the scale of C, making, with its eleven transpositions, *seventy-two* triads available for musical composition.

A closer examination will show the connection of these six triads with each other :—

C	is connected with	G	by its	fifth, G.
D	„	G	„	fourth, G, and sixth, B.
E	„	C	„	third, G, and sixth, C.
F	„	C	„	third, A, and fifth, C.
G	„	C	„	third, B.
A	„	C	„	third, C
C	„	G	„	third, G

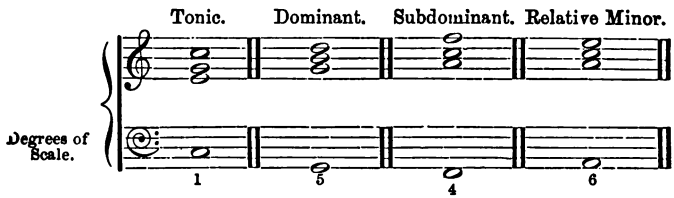
10. Four of these triads require particular attention and explanation, as they are the groundwork of modulation in musical composition.

1st. The triad or normal scale of C is termed the *Tonic* (or key-note), and is formed on the first degree of the scale.

2nd. The triad formed on the fifth degree of the scale is termed the *Dominant.*

3rd. The triad formed on the fourth degree of the scale is termed the *Subdominan*

4th. The triad formed on the sixth degree of the scale is termed the *Relative Minor.*
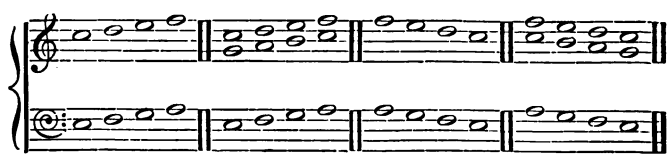


The two minor triads formed upon the second and third degrees of the scale, D and E, are respectively termed the *Supertonic* and *Mediant;* their sounds, however, are absorbed in the triads of the tonic and dominant, and as they subsequently become relative minors in the major transpositions of the normal scale to F and G, it is not necessary to consider them separately.

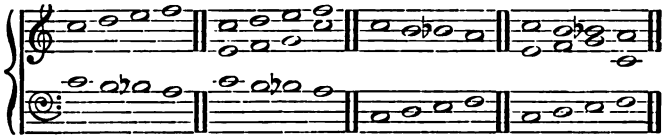
The *Sharp Seventh* and last degree of the scale is termed the leading note, and though it is the fifth of the mediant (E), is almost without exception used with the harmony of the dominant triad.

11. In the study of Harmony, the progression or movement of the different sounds forming the triad and its transpositions, must be attentively considered. There are three forms of progression:—Parallel, Contrary and Oblique.

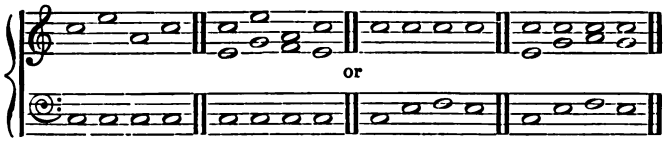
Parallel.—When two or more parts move ascending and descending together.



Contrary.—When two or more proceed ascending and descending at the same time.



Oblique.—When one part remains stationary while the others move in parallel or contrary progression.
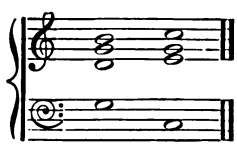


Of these three progressions the second or contrary is by far the most effective; the parallel and oblique are the weakest.
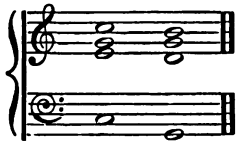
12. Triads proceeding from the dominant to the tonic, from the tonic to the dominant, from the subdominant to the tonic, and from the dominant to the relative minor are termed Cadences, because one of the three first is chiefly used in closing a musical composition.

Each Cadence has a distinctive name, and is placed in three positions.
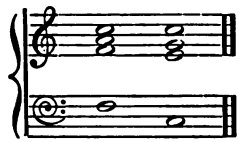
The dominant triad of C proceeding to the tonic is termed the *Perfect Cadence.*
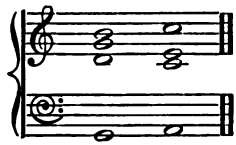


The tonic triad of C proceeding to the dominant is termed the *Imperfect Cadence.*



The subdominant triad of C proceeding to the tonic is termed the *Plagal* or *Church Cadence.*
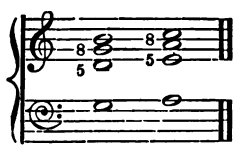


The dominant triad of C proceeding to the relative minor of C is termed the *Interrupted Cadence.*



13. As regards the Interrupted Cadence, attention must be called to the progression of the several parts forming it. In the first position the third of the triad rises one semitone, the octave falls a minor third, the fifth falls one tone, and in the other positions a similar course is pursued. The cause of this is to avoid the direct progression of octave and fifth which would otherwise ensue.
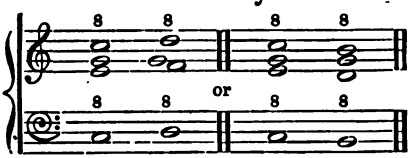
Thus:—



This progression of octaves and fifths in parallel motion has from the earliest times of harmonic study been strictly forbidden, although in some few instances (so few indeed that the exception only confirms the rule) some great composers have thought fit to disobey the universally-acknowledged law, not through ignorance of the rule, but with deliberate intention to produce certain effects which, in their idea, could not be attained without its infringement.

14. The reason why in a progression of triads consecutive octaves are not allowed, is sufficiently clear from the fact that a triad with one of its component parts doubled contains four sounds; if two triads, therefore, contain consecutive octaves (or two sounds following each other at the interval of an octave) accompanied only by two other parts, the four parts really become only three, and considerable weakness in the harmony is the result.

Thus :—

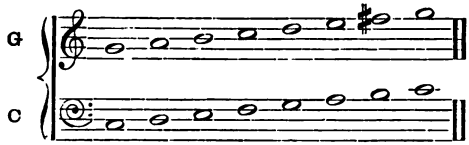


In this example there are apparently four sounds, but it will be seen that the bass and the treble are the same, so these triads can only be said to contain *three* real parts.

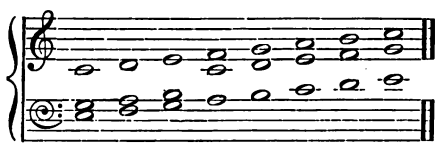
15. The reason for the interdiction of consecutive fifths is not so clear, and is more difficult of explanation. Many great theoreticians have endeavoured to find satisfactory grounds for the rule, and amongst their many opinions I would refer to that of CHERUBINI, one of the greatest of modern writers on Harmony, as being some solution of the question.

16. In his work on Counterpoint and Fugue, he gives as his view of the case, the reason for the forbidding consecutive fifths is that the ear cannot hear two scales at the

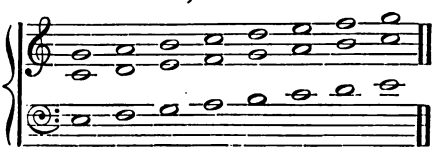
interval of a fifth proceeding in parallel progression at the same time.



If these two scales are heard together, the effect is certainly anything but agreeable, but would not the same argument apply to any two scales heard together in a similar manner? Take C and D, C and E, E and F, and place them as in the above example, and an equal, if not a more disagreeable effect will be the result. Besides, if consecutive fifths are forbidden, why should not consecutive fourths be also interdicted? for, after all, a fourth becomes a fifth, and a fifth a fourth on inversion.



The above example is perfectly correct, and is the scale of C accompanied by consecutive fourths and sixths, a progression which can be found in all compositions; but invert the fourths to fifths,



and the result is an utter breach of the rule.

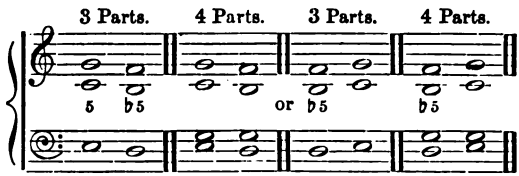
The fact is, it is impossible to explain the origin of this law,—it belongs to that class of rules called the "*de non scriptâ.*" It has been observed as a strict canon of art

for centuries with very few exceptions, and then only most occasionally. All musicians have observed it, and taught it as binding on those "who find out musical tunes;" and, therefore, any writer on Harmony who discards it, or who recommends its abolition, will be an innovator who will derive no benefit from his attempt to upset the ruling of the greatest composers.

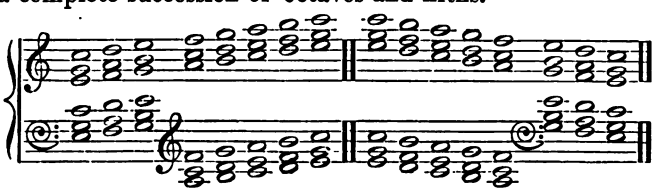
But, like all rules, this law to some extent *has* its exceptions. In the case of octaves, for instance, the sublimest effects are produced by singing in unison, that is, male and female voices joining in a melody, and necessarily singing in octaves.

These octaves, though in one sense consecutive, are invariably accompanied by correctly-written harmony, and are considered only as doubling the melody, and not as infringing the law.

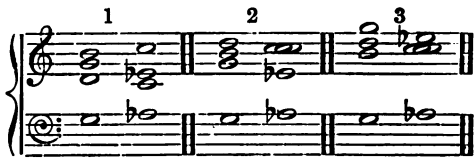
17. Again, in the case of fifths, a perfect fifth may be followed by an imperfect fifth, and *vice versâ*.



The ascending or descending scale (more especially in instrumental music,—I recollect no example in vocal writing) may effectively be used thus, thereby producing a complete succession of octaves and fifths.



18. The Interrupted Cadence can be very effectively used by raising the fundamental sound, or root, one diatonic semitone in place of the whole tone in the three positions of the triads.

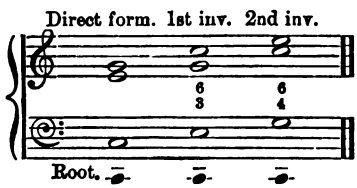


The Inversions of the Triad.

Although it is quite possible to compose a piece of music which shall entirely consist of triads in their direct form (*i.e.* with the root or fundamental note as the lowest sound), yet such a composition, as a general rule, would be found extremely monotonous and tiring to the ear, which would require some variety in the disposition of the sounds forming the triad.

This variety is formed by the inversion of these sounds. It will be recollected that the inversion of an interval is formed by the lowest sound becoming the highest, and the highest sound becoming the lowest. (See Chapter I., para. 16.)

Inversions of the triad are formed by dispersing the sounds forming it, and adding as their harmony the other component parts. Thus :—



From this example it will be seen that by taking the third of the root for the lowest sound, and adding the root itself, C, and its fifth, G, as harmony, the combi-
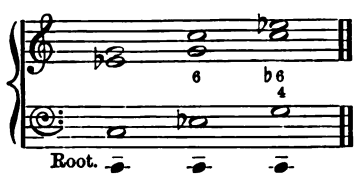
nation of a third and a sixth is obtained. From E to G is a third; from E to C is a sixth. This forms the First Inversion of the Triad, and is called the Chord of the Six-three, or $\frac{6}{3}$.

In figured basses the "3" is rarely marked, it being understood that in a harmony of three sounds, the third cannot be omitted.

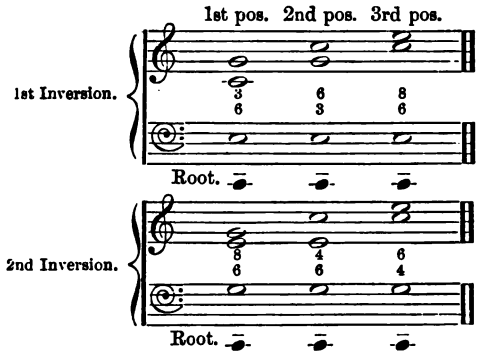
By taking the fifth of the root, G, for the lowest sound, and adding the root itself, C, and its third, E, as harmony, the combination of a fourth and a sixth is obtained. G to C is a fourth, G to E is a sixth. This forms the Second Inversion of the Triad, and is called the Six-four, or $\frac{6}{4}$. These two figures must always be used in the formation of this inversion.

An examination of these inversions will show that they contain no other sounds than those forming the triad in its direct form. The root or fundamental sound of any inversion marked 6 or $\frac{6}{4}$ will be found in the sixth, a major third below, and in the $\frac{6}{4}$ a fifth below the lowest sound of the inversion.

In the minor triad, the third is minor, and with its inversion is formed thus:—



12. As each of these inversions contain three sounds, they can be placed in three positions of the triad in its direct form.



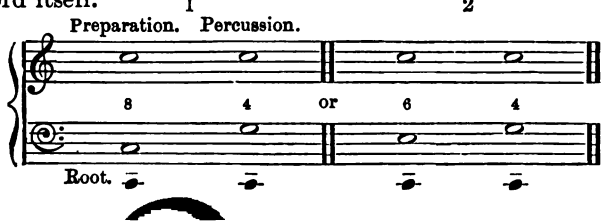
13. The First Inversion of the Triad, or Chord of the Sixth, can be used in any form, as it is composed only of consonant intervals, the sixth and third.

The Second Inversion of the Triad, or Sixth and Fourth, in strict writing, as regards the fourth, requires preparation, as it is here that the interval of the fourth is considered as a discord.
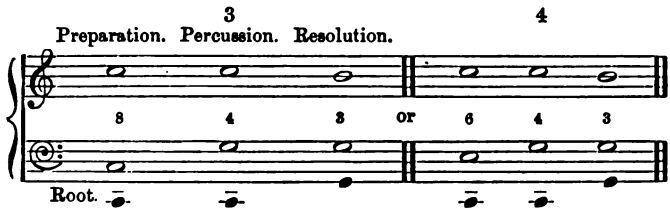
It will be remembered that in the classification of intervals (Chap. I., para. 16) I placed the fourth both in the consonant and dissonant class, for reasons then stated. In this inversion of the triad, the fourth is dissonant, and requires *preparation*, *percussion*, and *resolution*, and, as the same rule applies to all discords, explanation of these terms will be given.

Preparation occurs when the sound to be heard as a discord, is previously heard as a consonant or concord.

Percussion occurs when the sound is heard as the discord itself.
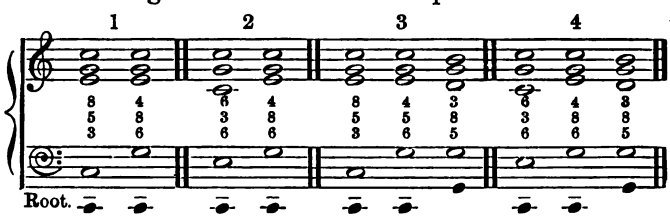


Resolution occurs when the discord is resolved into a concord.
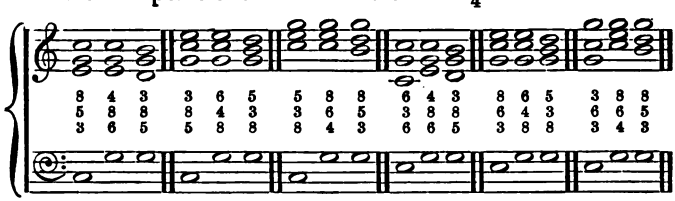


In these examples, the first shows the discord prepared by the octave and resolved to the triad of the *dominant* or fifth of the scale in its second position and the direct form. The second example shows the discord prepared by the first inversion of the tonic or chord of the sixth, resolving itself as in the first example.

The full-figured bass of these examples is :—



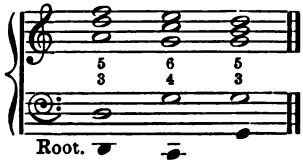
The three positions of this use of the $\frac{6}{4}$ are :—
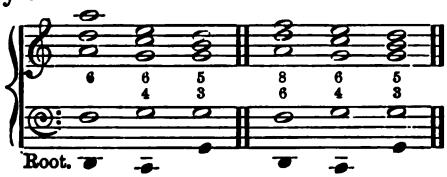


The roots of these inversions are similar to those in examples 1 to 4.

In using the chord of the $\frac{6}{4}$, or second inversion of the triad, the absolute necessity of preparation of the fourth is frequently dispensed with.
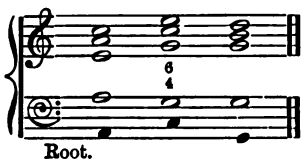
1st. The minor triad, formed on the supertonic, or second sound of the scale, may be followed by the chord of the $\frac{6}{4}$ without preparation, thus :—



2nd. By the first inversion of the minor triad :—



3rd. By the relative minor :—



In the minor triads similar use may be made of the first and second inversion, but in every case the minor third must be employed, both in the inversion itself and in the previous chord.
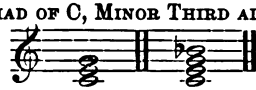
CHAPTER II.

ON THE ADDITION OF A MINOR THIRD TO THE TRIAD, OR THE CHORD OF THE DOMINANT SEVENTH.

1. It has now been shown that the normal scale of C contains three major and three minor triads. (Part II., Chap. I., para. 9.)

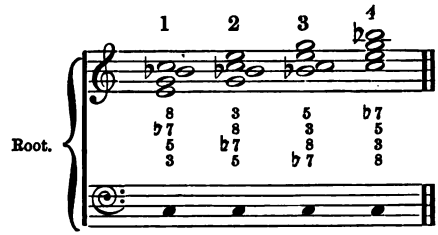
These, with the eleven transpositions, give *seventy-two triads* for the use of musical composition. To these must be added the two inversions $\frac{6}{3}$ and $\frac{6}{4}$ of each triad in the three positions, adding another seventy-two to the former, or one hundred and forty-four means of variety in music. Large as this number may appear, it by no means exhausts, but rather only begins to display the power of harmony. The first mode of increasing this power is by adding an interval of a minor third to the fifth of the triad of C, viz. B♭ :—

TRIAD OF C, MINOR THIRD ADDED.



This addition forms the chord of the flat or dominant seventh, the reason for which name must be deferred for the present. The above example shows that this addition forms no new chord. It is all the same, the triad of C, with a fourth sound, not the octave of the root, but an addition of another consonant interval of a minor third, which, added to the fifth of the root, forms, between the extremes C to B♭, the interval of a minor or flat seventh.

As this chord contains four sounds, it is placed in four positions, the root (as in the triad) being doubled.

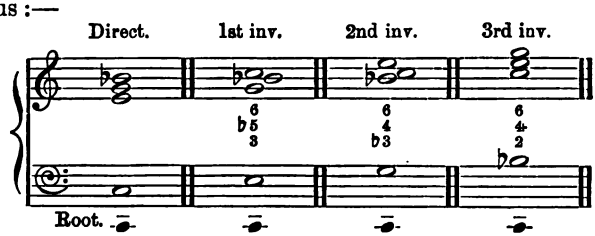


2. This chord has one peculiarity—that it must always be accompanied by its *major third.* If the *minor third* is used, the distinctive character of the chord of the flat seventh is lost, and the chord belongs to the second and last addition to the triad, viz., the chord of the *ninth*, which will be the subject of the next chapter.

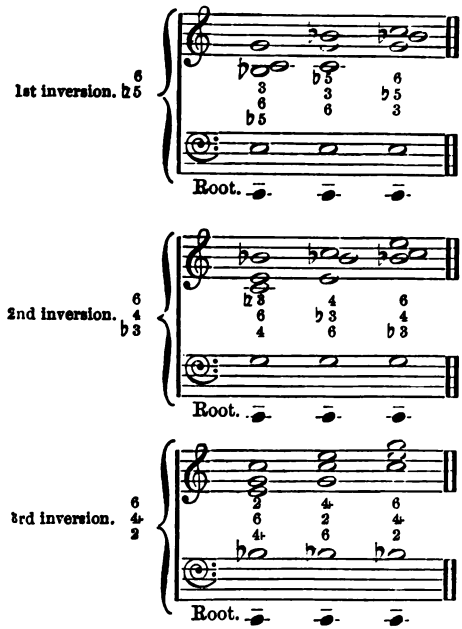
As this chord belongs to the discords (see Part I., Chap. I., para. 15), and, like the second inversion of the triad ($\frac{6}{4}$), requires preparation and resolution, the inversions will be explained previous to showing the mode of its application in Harmony.

The inversions are formed in the same manner as in the triad, but as there are four instead of three sounds in the chord, so there are three inversions instead of two, and additional intervals are thereby brought into use.

The inversions of the flat seventh are formed, as in those of the triad, by dispersion of the sounds of the $\frac{7}{5}$ chord, thus :—



These inversions can be used in the following positions:—



Each of these inversions contains the sounds forming the full chord, but great variety is obtained by substituting the dispersed sounds, instead of the root, for the lowest sound.

The first inversion of the flat seventh has the third of the root for its lowest sound, with its third, flat fifth, and sixth for its harmony, or, in figures ... $\frac{6}{\flat 5\ 3}$

The second inversion of the flat seventh has the fifth of the root for its lowest sound, with its minor third, fourth, and sixth, for its harmony, or, in figures, $\frac{6}{4}$ $\flat 3$

The third inversion of the flat seventh has the flat seventh of the root for its lowest sound, with its second, sharp fourth (tritone), and sixth for its harmony, or, in figures $\frac{6}{4\flat}$ $\frac{}{2}$
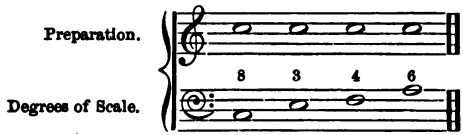
The interval of the tritone is always expressed by this figure, 4+

The roots of these inversions are found in the first inversion—$\flat\frac{6}{5}_{3}$—a major third below the lowest sound.
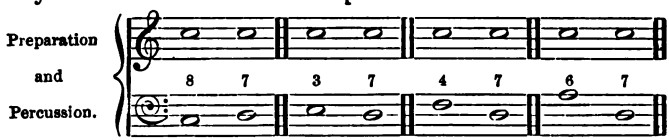
In the second inversion—$\frac{6}{4}_{\flat 3}$—a fifth below the lowest sound.

In the third inversion—$\frac{6}{4+}_{2}$—a flat seventh below the lowest sound.
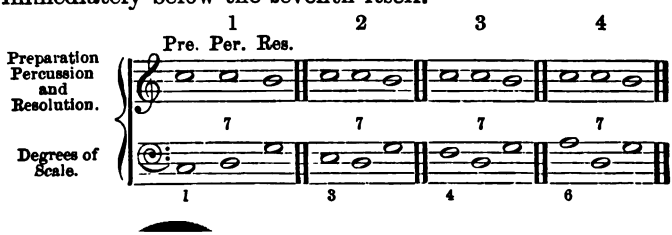
3. This chord is prepared by the previous concord of an octave, a third, a fourth or sixth of any transposition of the scale in which a composition may be written.
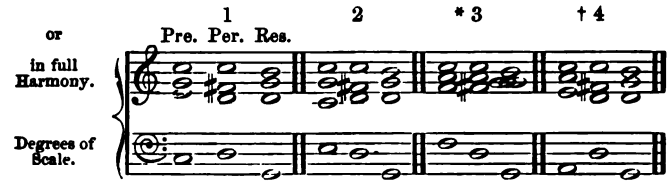


Either of these concords, two belonging to the tonic, one to the subdominant, and one to the relative minor, may be used to introduce the percussion of the discord.
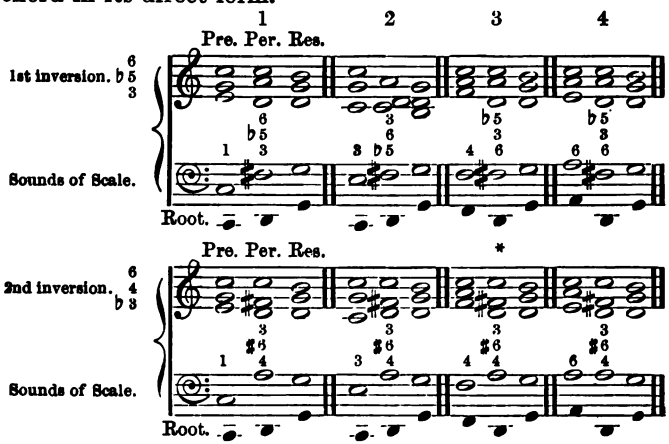


The resolution in every case of the flat seventh, whether in its direct or inverted form, is to the semitone or tone immediately below the seventh itself.
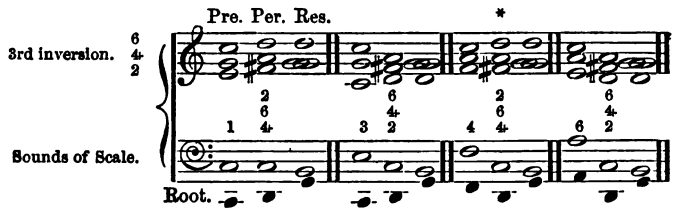




By preparing the discord of the flat seventh on D by C, we reach the dominant of G (D) by resolution. As this is the case in all the eleven transpositions and inversions of the chord, it follows that it is essentially a dominant harmony, and is, therefore, more often termed the chord of the dominant seventh than the chord of the flat seventh.

4. The inversions of this chord require in strict writing an equal preparation, percussion, and resolution, as in the chord in its direct form.



* This form of preparation can hardly be recommended, on account of the harshness of F, the subdominant of C, in the lowest sound, being followed by the major third (F♯) of D, but as it is not absolutely incorrect, it is shown as a possibility.

† In the preparation formed on the sixth of the scale the fifth of the root may be added.
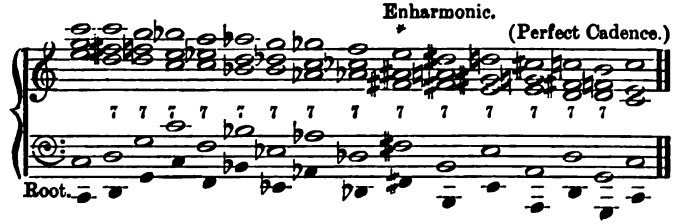


(The examples marked * are possible, but open to the same objection pointed out in paragraph 3.)

In the three last examples of the third inversion, it must be observed that the discord is heard an octave lower than the preparation (in Harmony two octaves are considered as one,—see Part I., Chap. I., para. 20). This is a licence permitted in order to ensure the falling of the discord to the sound below. In fact, this third inversion— $\frac{6}{4}$ —of the dominant seventh is a resolution of the flat seventh, and cannot be used otherwise than as the lowest sound of the inversion.
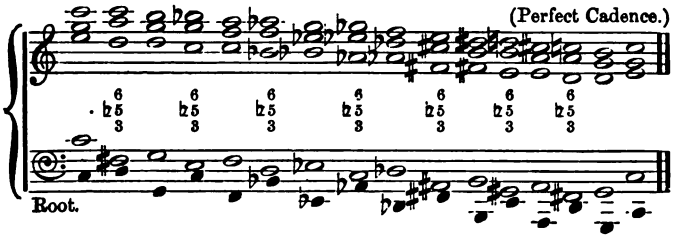
5. The exceptions to the strict rule of Preparation, &c., in the use of the chord in the dominant seventh are not numerous, and are chiefly comprised under two heads, viz., in a sequence, and in the falling of the octave of the roots of a triad to its tone below.

A Sequence is a succession of chords of the same species following each other at the interval of a tone or semitone, or any other interval. Thus, the chromatic scale may be effectively harmoinsed by a sequence of chords, each of which shall, after the first chord, form a succession of dominant sevenths and their inversions (Enharmonic.)
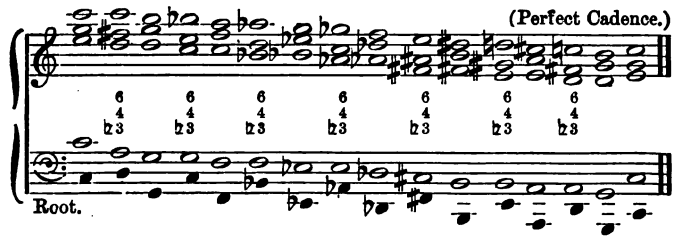
Sequence of Dominant Sevenths (direct form), $\frac{\flat 7}{5}$:—
$\frac{}{3}$



Sequence of the First Inversion of the Dominant Seventh, $\flat\frac{6}{5}{}^{6}_{3}$:—
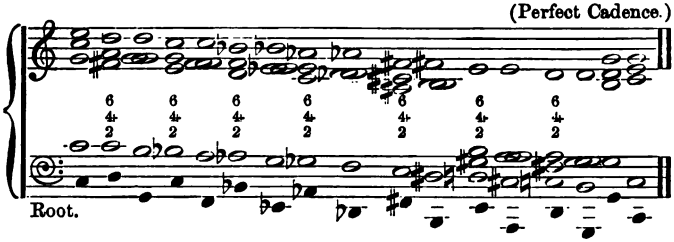


Sequence of the Second Inversion of the Dominant Seventh, $\flat\frac{6}{3}{}^{6}_{4}$:—
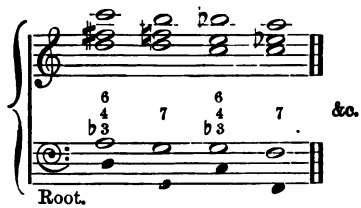


Sequence of the Third Inversion of the Dominant Seventh, $\frac{6}{2}{}^{6}_{4}$:—

(Perfect Cadence.)

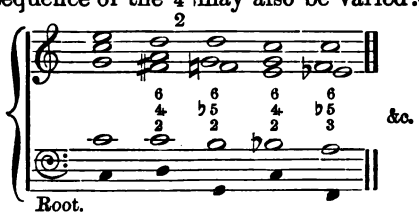


A strict observation of the different forms of sequences constructed solely on the direct form and inversions of the dominant seventh in the normal scale, and its eleven transpositions, will show that the want of preparation is rather apparent than real, for each chord is really prepared by the immediate chord before it, as from B to B♭, &c., &c., and the resolution in all the examples is strictly in accordance with the rule.
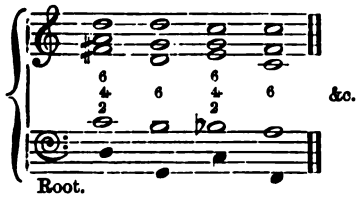
The sequence of the $\frac{6}{4}_{\flat 3}$, or of the second inversion of the dominant seventh, may be slightly varied by taking the flat seventh of every other chord in place of the triad in its direct form:—



And the sequence of the $\frac{6}{4}_{2}$ may also be varied:—
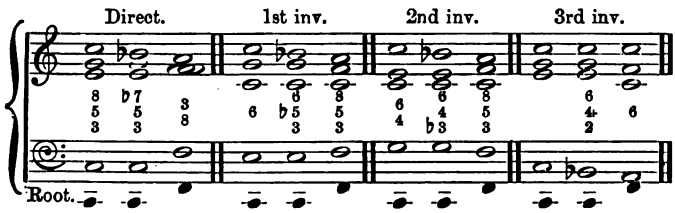


In the example of the sequence of the third inversion of the dominant seventh—$\frac{6}{4}_{2}$—it will be seen that the fifth of the root rises, thus forming a unison. This is the correct mode of resolution, but not absolutely essential, for greater power and equal correctness will be attained by doubling the fifth of the root instead of the octave.



As has been said, the former of these resolutions is the most correct, because it is an established rule that the sharp seventh of the scale (in the normal scale of C,—B), or the third of the dominant, shall in all cases rise a semitone, and for this reason it is termed the leading note. There is, however, no rule without some exception, and I cannot help thinking that the power attained in the harmony by the doubling of the fifth of the root in the place of the octave is preferable, because, after all, the root of the dominant is fully heard by the fifth of the previous chord (A) falling to the sound (G) itself, thereby quite satisfying the laws of sound.

6. The second licence in the use of the dominant seventh and its inversions, is found by taking the triad in its direct or either of its two inverted forms of $\frac{5}{3}$ and $\frac{6}{4}$ and immediately following with the dissonant seventh without preparation.



7. The formation of this very important chord of the dominant or flat seventh, its inversion, and its method of application, with the licences permitted, being now explained, this chapter will end by showing that a large addition to the power of harmony has been attained.
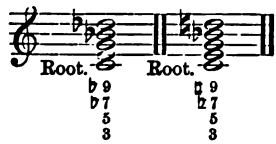
If to the one hundred and fourty-four means of variety in the use of the triad and its inversions be added the normal chord of the flat seventh in four positions, and eleven transpositions (48), and three inversions, in three positions, and eleven transpositions (36), we find two hundred and twenty-eight means of variety for the use of musical composition, each derived from the one source of the simple triad C E G.

CHAPTER III.

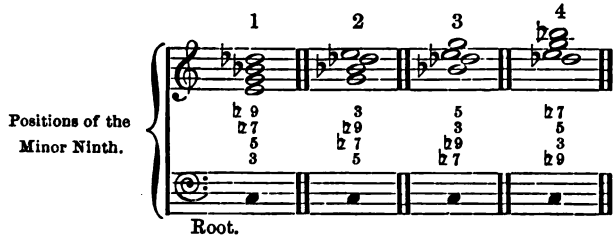
ON THE ADDITION OF A MINOR OR MAJOR THIRD TO THE FLAT SEVENTH OF THE NORMAL TRIAD OF C, OR THE CHORD OF THE MAJOR AND MINOR NINTH.

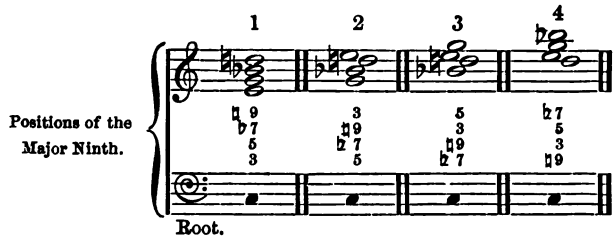
1. We are now to consider the third and last addition to the triad, and consequently the last part of the study of Harmony; but as the subject is of the greatest interest and importance, it will be dwelt on at much greater length than was necessary in the two previous chapters of this work.

2. A minor or major third added to the dominant or flat seventh of the triad of C forms the chord of the major and minor ninth. (See Part I., Chap. I., para. 20.)
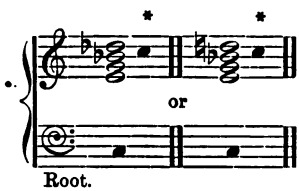


This addition to the triad produces, with the root, a chord of five sounds, which are placed in four positions.





3. One peculiarity of this chord will attract observation, namely, that the root is not doubled in the harmony, as in the case of the triad, and the flat or dominant seventh.

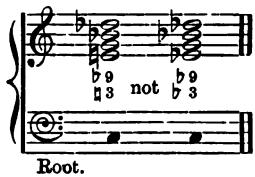
The reason is that if the root were doubled, the unbearable discord of a diatonic semitone in the minor, and a whole tone in the maior ninth would be introduced.



As the minor ninth is the source of nearly all the discords in Harmony which exist, and are so eminently useful in composition, it will be found that were the doubling of its root admissible or advisable, its use would be more "honoured in the breach than the observance."

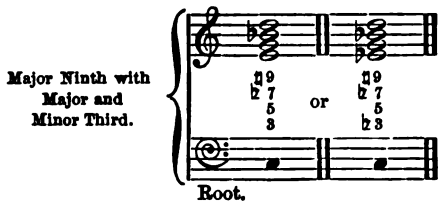
4. The chord of the ninth, therefore, in its direct form (with the root as its lowest sound) must always be used with this lowest sound a ninth from it, either minor or major.

5. The minor ninth possesses the same peculiarity in its direct form as the dominant seventh—it *must* always retain the major third.
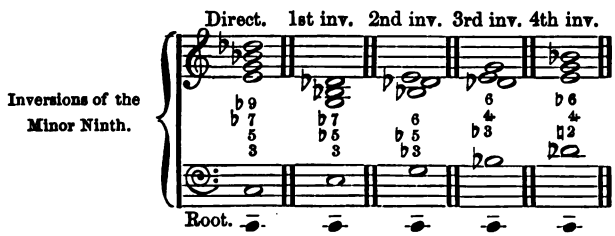


Were the minor third of the root permitted in this chord, it is evident, that on inversion, it would become the direct form of the dominant seventh in E♭ in its resolution to A♭.
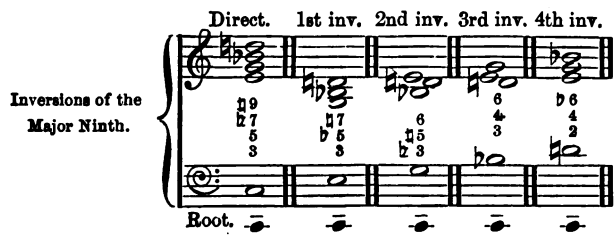
6. This rule, however, does *not* apply to the *major ninth*, which can retain the major or minor third; if not *overused*, it has an excellent effect, although until lately it was hardly to be found in any musical work.



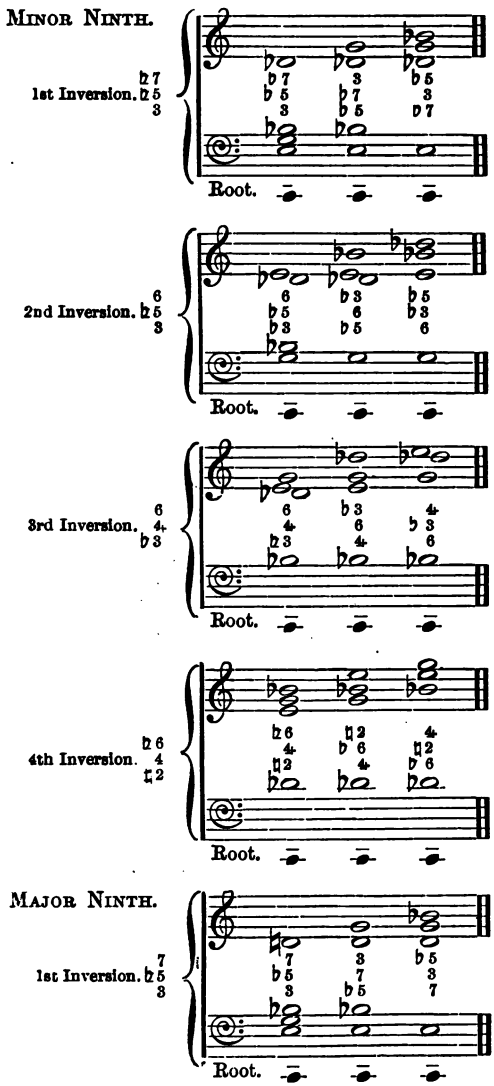
7. The chord of the ninth, both major and minor, has also a close relationship with the chord of the dominant or flat seventh, inasmuch as it is in itself essentially dominant in its resolution, both in the direct form, and in the inversions.

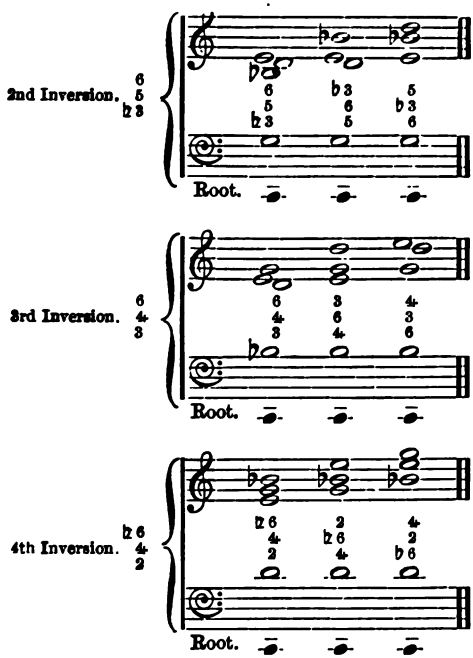
8. The inversions of the chord of the ninth are formed in the same manner as those of the triad, and dominant seventh, viz., by dispersion.





9. These inversions can be used in the following positions :—


Minor Ninth.
1st Inversion.
2nd Inversion.
3rd Inversion.
4th Inversion.
Major Ninth.
1st Inversion.
Root.



10. As in the chords of the triad and dominant seventh, each of these inversions contains all the sounds of the chords, both of the minor and major ninth, with the dispersed sounds forming it.

The first inversion of the minor ninth has the third of the root for its lowest sound, with its third, flat fifth, and flat seventh for its harmony, or, in figures, $\flat\,{}^{7}_{\flat 5}{}^{}_{3}$

The second inversion of the minor ninth has the fifth of the root for its lowest sound, with its sixth, flat fifth, and minor third for its harmony, or, in figures $\,{}^{6}_{\flat 5}{}^{}_{\flat 3}$

The third inversion of the minor ninth has the flat seventh of the root for its lowest sound, with its sixth, sharp fourth, and minor third for its harmony, or, in figures $\begin{matrix}6\\4\\\flat 3\end{matrix}$

The fourth inversion of the minor ninth has the minor ninth of the root for its lowest sound, with its sharp second, sharp fourth, and minor sixth for its harmony, or, in figures $\begin{matrix}\flat 6\\\sharp 4\\\sharp 2\end{matrix}$

The roots of the major ninth are the same as those of the minor, but the figures representing the harmony are:—

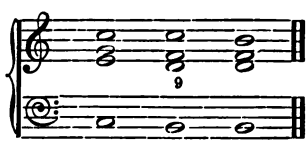
First Inversion—$\flat\,\begin{matrix}7\\5\\3\end{matrix}$—the third below the lowest sound.

Second Inversion—$\flat\,\begin{matrix}6\\5\\3\end{matrix}$—the fifth „ „

Third Inversion—$\flat\,\begin{matrix}6\\4\\3\end{matrix}$—the flat seventh „ „
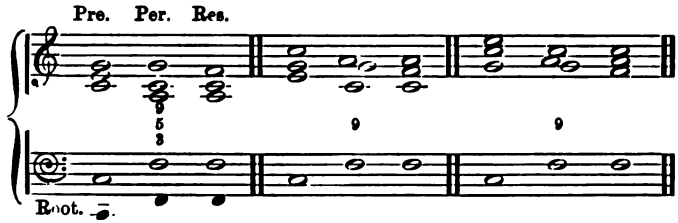
Fourth Inversion—$\begin{matrix}\flat 6\\4\\\natural 2\end{matrix}$—{the major or minor ninth} „ „

11. The use of the major ninth, either in its direct form or in inversion, in strict writing, requires the same preparation, percussion, and resolution as the $\frac{6}{4}$ of the triad, and the direct form and inversions of the dominant seventh. The preparation by means of the octave must, however, be strictly avoided,
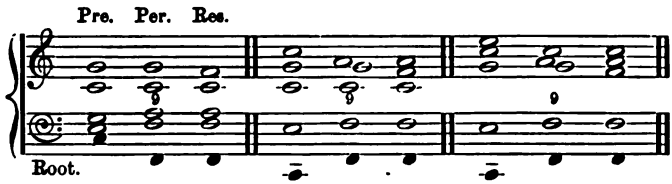


as octaves between the extreme parts (not avoided by the ninth) would be the result.

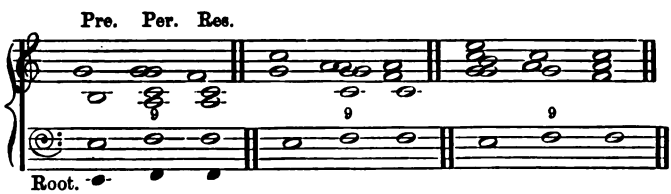
The ninth is prepared properly by the tonic triad in its direct form, and in three positions,



and by the first inversion of the tonic in three positions,
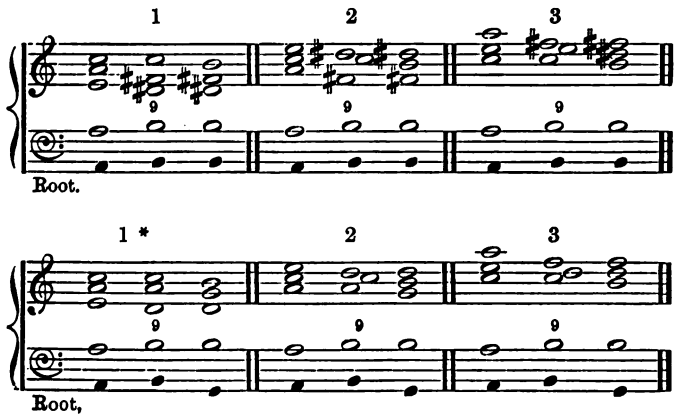


or by the minor triad of the third of the scale in three positions:
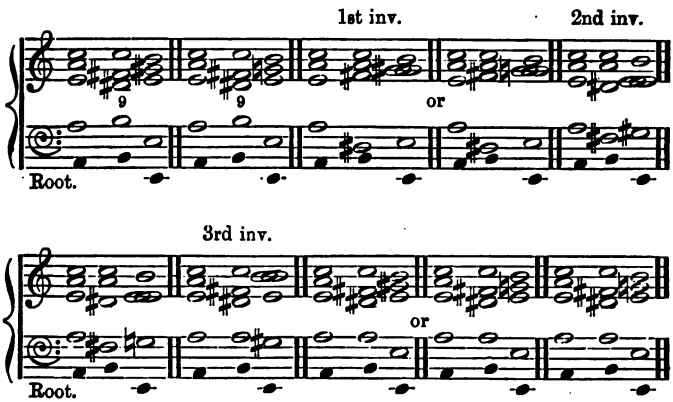


12. The chord of the major ninth, as shown in the first and second examples, is accompanied by the major and minor third (A, or A♭). The third example can only be used with the major third.
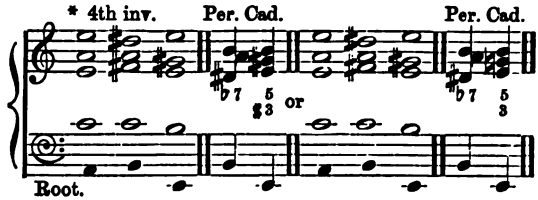
The minor ninth must be prepared in its direct form by a minor third; on percussion, it may be accompanied by a major or minor third.



The minor ninth, in its direct form and inversions can resolve to the dominant of its scale, with either its major or minor third, or
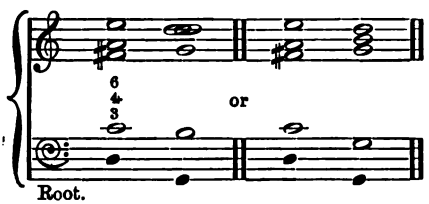


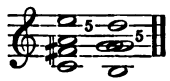
* In this example the addition of the seventh of the root is preferable to the flat fifth. The second and third positions are correct, but extremely harsh, and should be avoided in practice.



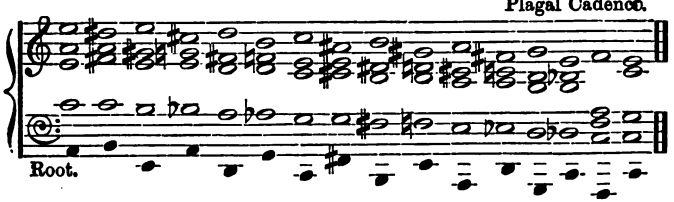
These examples apply also to the major ninth, but they must be always accompanied by the major third of the root in preparation.

13. The progression of the parts in the third inversion—$\frac{6}{4}_{3}$—of the major ninth must be carefully considered.



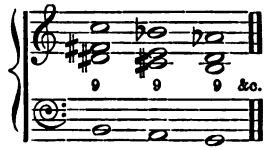
This example shows that the third falls a whole tone, the sixth rises a fourth, and the sharp fourth rises a diatonic semitone. This arrangement is necessary to avoid consecutive fifths, which would ensue were the sixth of the inversion to fall,  and the rise of a fourth

* The use of the fourth inversion cannot be advised unless it is followed by the perfect cadence expressed in the small notes, or is used in a sequence.



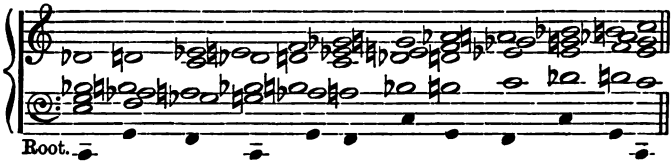
is preferable to that of doubling the third of the root (or the sharp seventh of the resolution), a practice always to be avoided.

14. The exceptions to the strict rule of preparation, &c., in the case of the minor ninth are remarkable and numerous, but in its direct form, the ninth can never be used without preparation; such a progression would be intolerable.



In the inversions, however, the most effective use of this chord forms the discords so frequently found in music of all schools and countries.
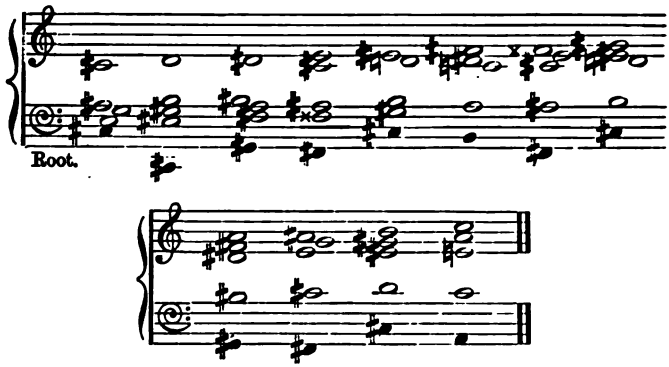
Discords of the First Inversion of the Minor Ninth.



However discordant this sequence may appear, it is nevertheless perfectly correct, and shows that all these transpositions have the triad for their foundation, and prove the fact that there is only one triad, and eleven transpositions.

A careful examination of the above example shows that it commences with the normal triad of C, and that the rest of the example contains in each transposition a triad, reckoning from the root.

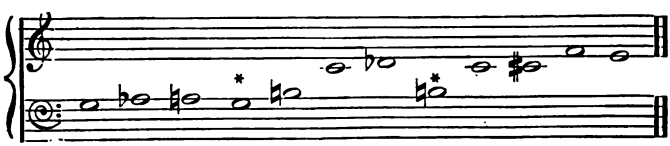
15. By treating this example enharmonically, another result is attained.



To the ear, this second example is precisely the same as the first, but the root of each transposition is totally different, thus showing the very great importance of maintaining the distinction between a diatonic and chromatic semitone, and proving that theoretically C ♮ and B ♯ are not the same sounds.

16. It may properly be asked with reference to the minor ninth, as exhibited in these two examples, why it is that a so apparently flagrant breach of the rule of preparation and resolution should be allowed.
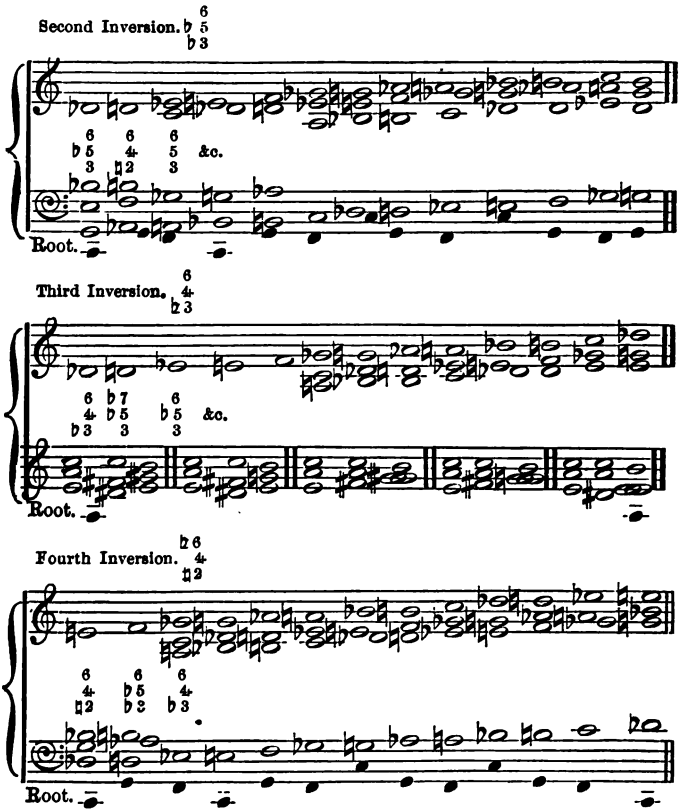
The answer is that a careful examination of the two examples, each producing a different root, by the use in the first example of the chromatic, and in the second of the diatonic semitone, shows a sequence of sounds which to the student are a sufficient compensation to the ear, to prevent the progressions exhibited being unbearable in any form.



These sounds, in the order here placed, will be found in the third sound of each transposition, with the exception of those two marked *, which will be found in the fourth sound of the transposition.

This arrangement, which is quite symmetrical, compensates the ear for the want of actual preparation.
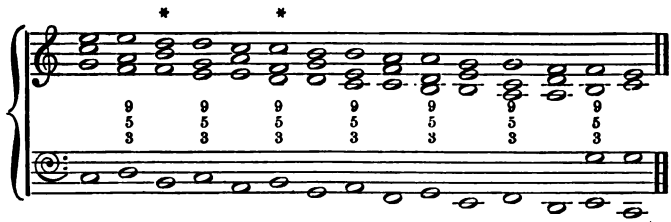
17. The sequence of the minor ninth may be used in the inversions.



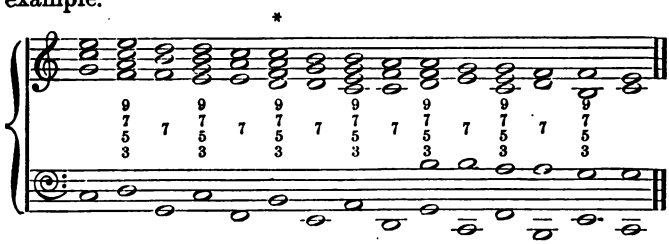
18. A careful examination of the sequences will show that while each transposition is an inversion of the minor ninth of its root, they do not all contain the same inversion, but are placed in other positions. This seeming contradiction arises from the nature of the sequence itself; but as the root in every case remains the same, this is of no consequence, nor does it at all invalidate the theory of every transposition containing with its root a complete triad.

These sequences may be employed in the descending scale; the roots will remain the same as in the ascending scale.

The sequences obtained by the use of the major ninth in its direct form and inversions are not so numerous as those of the minor ninth, but they are very useful and effective.



The roots are the lowest sounds in this and the next example.



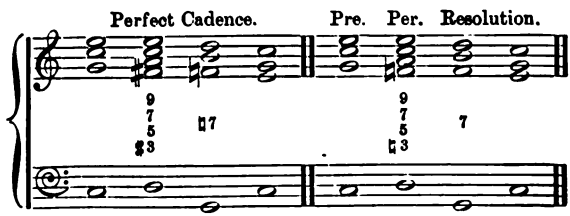
20. In the first example the chords marked * show a

slight irregularity in the triad, which contains an imperfect instead of a perfect fifth. This is a licence permitted in order to preserve the scale in its entirety; a B♭ in the bass would cause a modulation to the subdominant, which would quite destroy the object of the sequence.

The second example (to which the above explanation of the mark * equally applies) shows the same sequence of descending tones and semitones in the highest sounds as in the first example, but the addition of the seventh of the root on the chord of the ninth, and the falling of the lowest sound a fifth and rising a fourth, causing the addition of a seventh in the resolution of the discord, gives a power to the harmony which is most useful in composition, which power is also increased by the use of the minor third on the second, sixth, and eighth chords of the sequence.

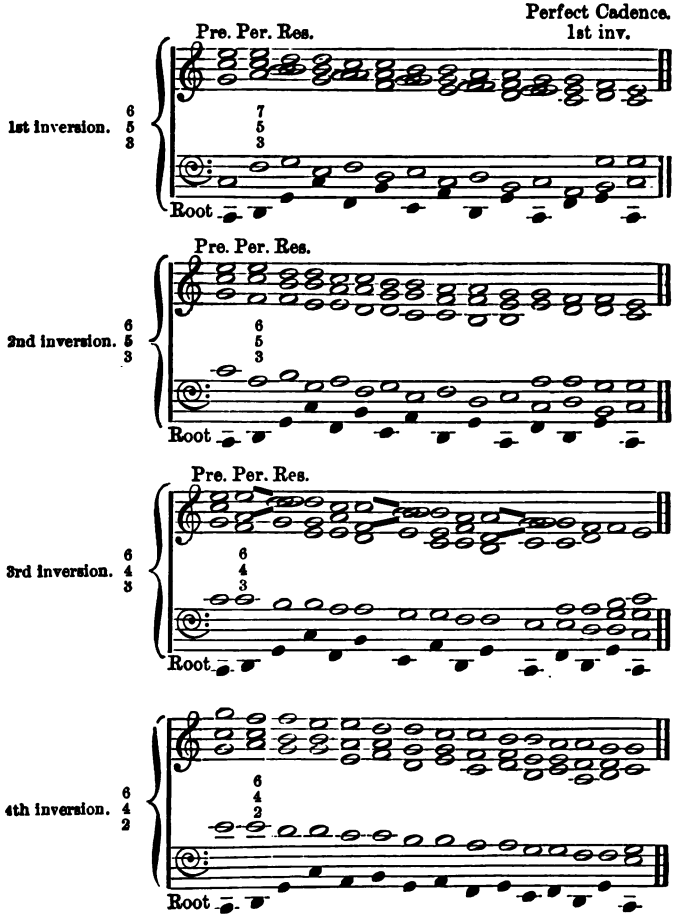
The addition of the fifth sound in the chord of the ninth in this example is rendered necessary to exhibit the full chord in its direct form. In instrumental music, this would be easily done; and in vocal writing, the parts would be divided between the altos or second sopranos of the chorus singing the work in which such a sequence (or part of it) would occur.

21. The chord of the major ninth may be added to that of the dominant seventh in the perfect cadence, but must be always resolved to the dominant seventh, either by preparation or the falling of one sound to the tonic.



22. The inversions of the major ninth cannot be used in the formation of sequences such as are found in the inversions of the minor ninth, but they are very effective when properly employed.

SEQUENCE OF THE INVERSIONS OF THE MAJOR NINTH.

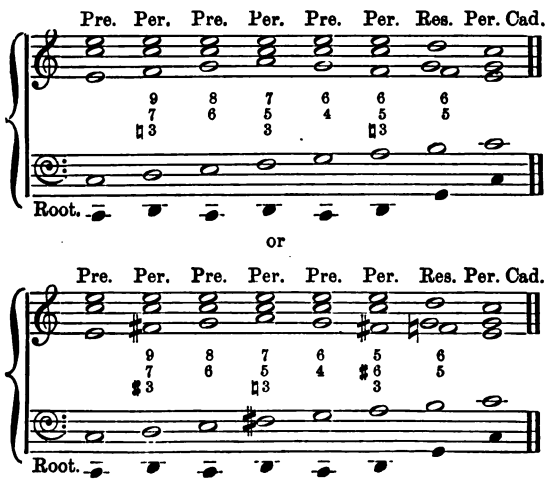


These sequences show the major ninth throughout, accompanied by the third of the root.
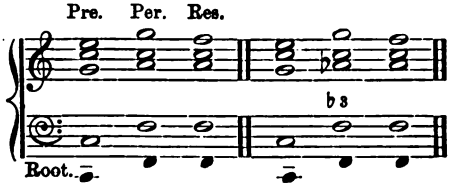
The second and third inversions exhibit in consequence a harshness which would be considerably modified by the use of the major third; but this would involve a modulation from the normal scale into its dominant transposition. The sequence is, therefore, left intentionally with the minor third of the root, and the employment of it in composition is quite correct, though, from its harsh effect, it should be sparingly used.

23. A very effective use of the major ninth may be made by prolonging and repeating the preparation and percussion, and delaying the resolution until it is employed by the first inversion of the dominant seventh on the perfect cadence.

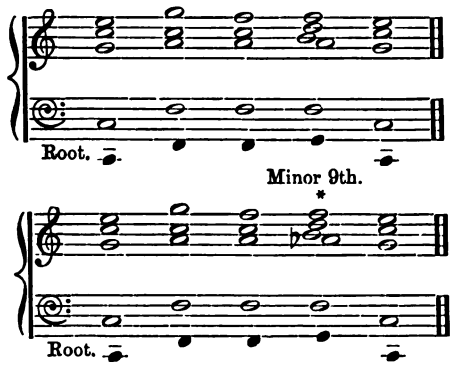
The major or minor third of the root may be used in this example, in which it is shown that the whole of the normal scale forms the lowest sounds.



24. By licence, the major ninth can be used without preparation of the sound forming it being heard in the portion of the scale, with either the major or minor third of the root.
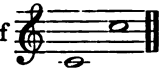


The above may be used with the major and minor ninth in succession, forming a prolongation of the Plagal cadence.



The sound marked * is a licence which will be alluded to in the next chapter.

25. The chord of the major and minor ninth, with its positions, its mode of preparation, percussion, and resolution, its inversions in their positions, and its application, with the licences permitted to it, being now amply explained, the second part of this work is now ended.

A short retrospection, however, may be permitted in the form of a recapitulation of what has been explained to the student.

In the outset of the work it was asserted that one scale (major and minor), and one chord (the major and minor triad), with two additions (the flat or dominant seventh and the major and minor ninth), formed the foundation of all harmony, and that the variety in musical composition was attained by the transposition of this chord into the several sounds contained between the octave of 

These transpositions, eleven in number, are :—
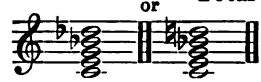
The triad.—Direct form, 3 positions; 2 inversions, 3 positions—in all, 7; or, with the minor triad and inversions, or sources of variety 168

The flat or dominant seventh.—Direct form, 4 positions, 3 inversions in 3 positions—in all, 10 ... 156

The major ninth.—Direct form, 5 positions; 4 inversions in 4 positions, all with transpositions ... 108

The minor ninth.—Do. 108

Total 540

Thus, from the simple chord  are generated 540 sources of variety at the disposal of the composer of music; and when it is remembered that on an average, musical instruments have a compass of at least three octaves (the piano, harp, and organ have more), and that each of these octaves gives the octave either grave (low) or acute (high) sounds, it will no longer be a matter of wonder that such immense variety of sound can be produced.

Another assertion was also made which has been fully proved, namely, that each inversion of the triad, the dominant seventh, and the major and minor ninth must, calculating from its root, contain its complete triad in the direct form.

By applying to this rule the directions given for finding the roots, either a third, a fifth, a flat seventh, or a major and minor ninth below the lowest sound of the chord used in any musical composition, it will be evident that the root or foundation of the most apparently abstruse chords can be discovered without the slightest difficulty.

But putting the matter in another light, there are no abstruse chords in Harmony. Every chord without a dissonance must belong to the triad of the normal scale or to one of its transpositions, and every discord must belong to the dominant seventh and its inversions, or to the minor and major ninth and their inversions, both in the normal scale and its transpositions. This is the whole of Harmony, when the resolutions of the discords formed on the triad are properly used according to the rule so fully illustrated here.

PART III.

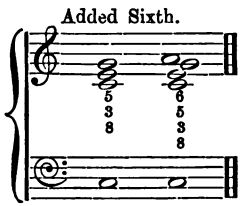
CHAPTER I.

ON THE SUPPOSED CHORDS OF THE ADDED SIXTH, AND THE DIMINISHED SEVENTH.

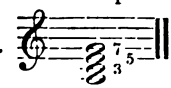
1. In using the term "supposed" at the heading of this chapter, I feel that I am treading on debateable ground, and that it is in this part of my work, that I shall meet with dissent.

If my views can be proved to be erroneous, I shall be happy to retract them, but twenty years of study have brought me to a firm belief that as additions to the triad, these chords do not and cannot exist as independent chords, but they are importantly useful in composition, and, as such, must be carefully examined and explained.

2. To commence with the *Added Sixth.* What is it? It is a whole tone added to the fifth sound of the normal triad.



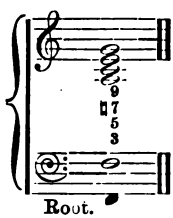
Now, if we look at this chord and endeavour to find its root, we shall find that that root cannot be C, because A

forms no part of the triad of C. Neither, for the same reason, can the root be A, because G has no part in the triad of A Minor. But the chord, having a very legitimate place in the theory and practice of Harmony, it is necessary to account for, and to find out its root. To accomplish this, let us invert the sounds comprising it. 

Here we have the sounds A C E G forming the intervals $\begin{matrix}7\\5\\3\end{matrix}$, reckoning from the lowest sound.

This chord in itself does not contain the sound of a dominant seventh, because the third is minor.

To comply with the rule, we must add to this lowest sound the interval of a major third, which will be F, which will give the chord

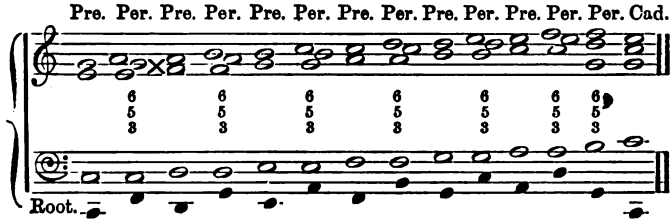


Here is the whole secret. The added sixth is neither more nor less than the first inversion of the major ninth, with the third of the root as its highest sound, and a major instead of a flat seventh as its harmony.
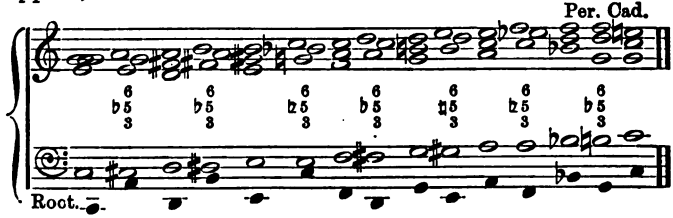


3. The chord of the added sixth, thus being proved to have no real existence as an independent addition to the triad, it must be treated as a discord and have its usual

preparation, percussion, and resolution. The following sequence* will show how this can be obtained :—
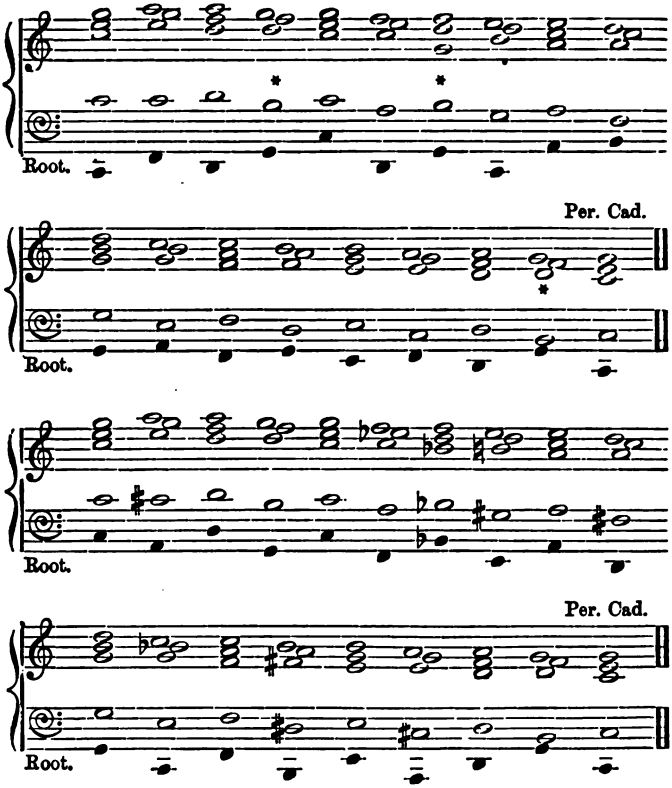


4. This example amply demonstrates the fact of the added sixth being really an inversion of the ninth; but lest the sounds which compose it should be confounded with the $\flat\,\frac{6}{5}_{3}$ or the first inversion of the dominant seventh, let the melody of the above sequence be shown with a dominant harmony, and a total variety of modulation will appear, with different roots in the discords.



This example may seem to show the addition of a sixth to the alternate transposition of the dominant seventh, but this only arises from the fact that the sixth is a component part of the inversion, which would not be complete without it.

5. Both the foregoing sequences may be used in the descending form.
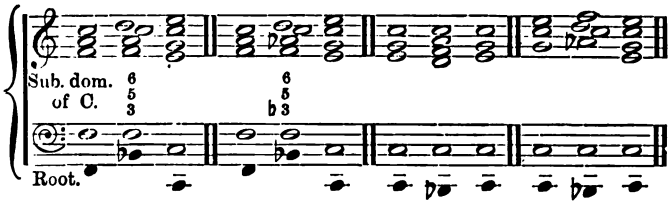
* In this example the third of the harmony rises and the ninth of the root falls, accounting for its sign ×.
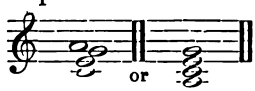


6. A licence is permitted to this inversion of the major ninth by which the actual resolution is avoided, and which, in fact, is a variation of the plagal cadence, which, it will be recollected, proceeds from the subdominant to the tonic.

This can be used either with the major or minor third, or, as in the second example, with the tonic harmony as preparation.

* Dominant seventh roots.
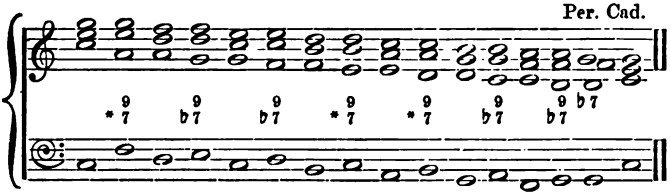


7. I have said in the commencement of this chapter that the question of the added sixth is liable to considerable doubt, not in my own mind, but in those of others, who, as musicians and theorists, must be interested in the subject. I therefore place, upon second thoughts, some further remarks upon it.
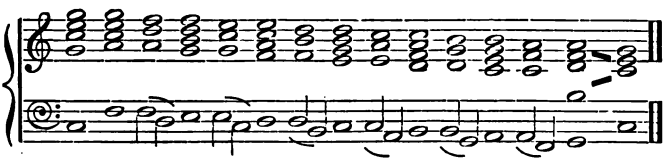
If the chord  is examined, it will be found to contain two triads—C E G and A C E—forming the tonic and relative minor triads of the normal scale C. But which of these triads contains the root or fundamental sound from which this chord is derived? I answer, Neither; because, in order to fulfil the natural law of sound, and to find the root of any chord, it is absolutely imperative, that every inversion of that chord shall be reduced to the chord itself in its direct form with the root as the lowest sound, and that to do this with the chord under discussion, a major third must be added to the lowest sound of the inversion, thereby obtaining the chord of the major ninth, with the root F.

8. It must now be shown why this particular chord contains the major instead of the dominant seventh. The dominant seventh has (as has already been explained) an invariable dominant resolution, that is, in its direct form, a dominant seventh on G, must resolve to C, and on C, to F, and so on through the whole series of transpositions, until C is again reached. Therefore the licence of using the

major seventh in this inversion of the major ninth is furnished to prevent excessive modulation. The sequence which follows will show this:



9. This example is placed here for the purpose of illustrating my argument for the introduction of the major seventh. It will be seen that it contains three major sevenths marked *, and with the perfect cadence, five flat sevenths, and that the scale is preserved without transposition. The use of this sequence is, except in portions, by no means to be recommended, on account of its extreme harshness, and of the hidden octaves between the lowest sound and its seventh above. It is true that this might be avoided, and the power of the chord increased by the addition of the fifth of the root, and prolonging the lowest sound by a half note, every other chord :—
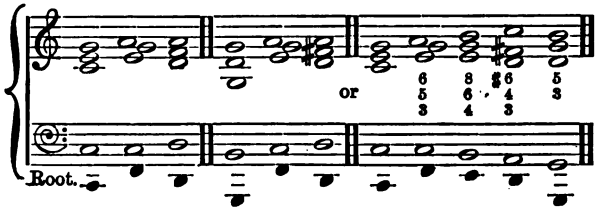


but the whole sequence is more to be regarded as a harmonic possibility, rather to be avoided than used.
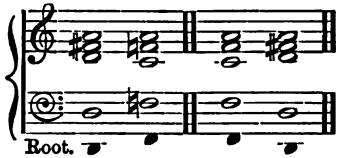
10. The last proof I shall offer in support of the theory that the added sixth is an inversion of the major ninth, is in its resolution.

However long the actual resolution may be held back,

it must always resolve to the tone or diatonic semitone below the concord.
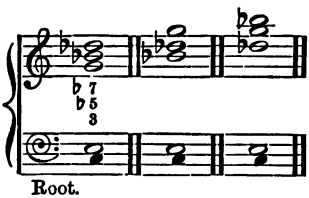


11. In these examples the root of F followed by the root of D may, to the eye, seem harsh, but it is not really so, for the third of F is A, and the fifth of D is A, and, though unexpected, there is nothing to prevent this succession of chords.



12. The so-called chord of the *Diminished Seventh*, is much more easily disposed of, and, like the added sixth, it has no independent existence.

It is simply the first inversion of the minor ninth, with the root a major third below the lowest sound of the inversion.



A reference to Part II., Chap. III., Paragraph 14, of this work will render any further reference to this chord quite unnecessary.

13. Such is my theory regarding these two chords, and my long experience in teaching it, makes me believe in it. The impossibility of adding anything to the triad beyond the major ninth is the ground which I take. If any theorist (and all have the fullest right to differ from me) will show me the fallacy of my argument, by adding anything to the triad but the sounds it can only consist of, I will gladly acknowledge my error. Pending such an effort, I submit that my argument amply explains the use of these five sounds, of which the triad and its additions consist, and chases away many doubts which "sore let and hinder" the student of Harmony "in running the race set before him."

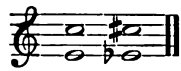
CHAPTER II.

ON THE CHORD OF THE EXTREME SHARP SIXTH.

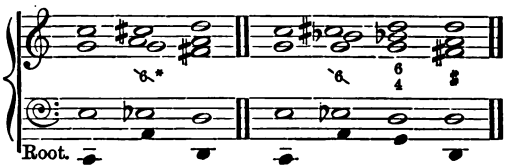
1. Having now demonstrated that after the major and minor ninth there is no possible addition to be made to the triad, the whole system of Harmony may be said to be completed. There are, however, some points yet to be carefully considered, and among these is the chord named at the head of this chapter—a chord which, while it is no addition to the triad, and, like the added sixth and diminished seventh, has no independent existence, is so exceedingly necessary in modulation as a means of writing music (as regards notation) correctly, that any work on the Theory of Harmony would not be finished without an explanation of it.

2. The interval of the extreme sharp sixth (see Part I., Chap. I., Paragraph 17,) is formed by the interval of a
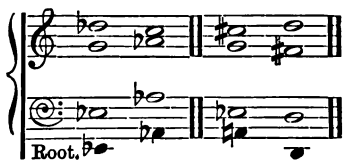
minor sixth being raised a chromatic semitone in the highest sound, and lowered a chromatic semitone in the lowest sound.



The harmony with which this chord is accompanied may be used in two ways.



There is one peculiarity in this chord, viz.: that, strictly speaking, it has no root, thus forming a remarkable and only exception to chords founded on the triad. I have given the above root, as nearly approaching to what it should be, but it will be preferable for the student to consider this chord as essentially enharmonic, and for this reason—

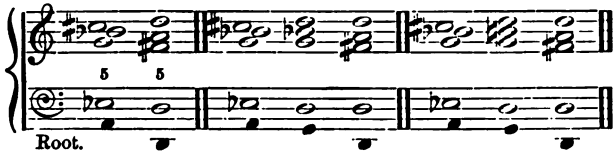


As regards the first example, there is no doubt whatever about its being a resolution of the dominant seventh on E♭, to its Tonic A♭.
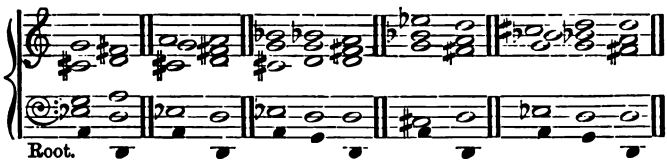
But by the enharmonic change in the second example, of the D♭ becoming C♯, a totally different, though also dominant, resolution is found, viz., to D ♮.

* A line through the figure 6, thus 6̸, means that the 6th is to be *raised* a chromatic semitone.

In using this chord in four parts, when accompanied by the fifth of its lowest sound, it must be succeeded by the $\frac{6}{4}$ of the major or minor triad, or direct fifths would be the result.
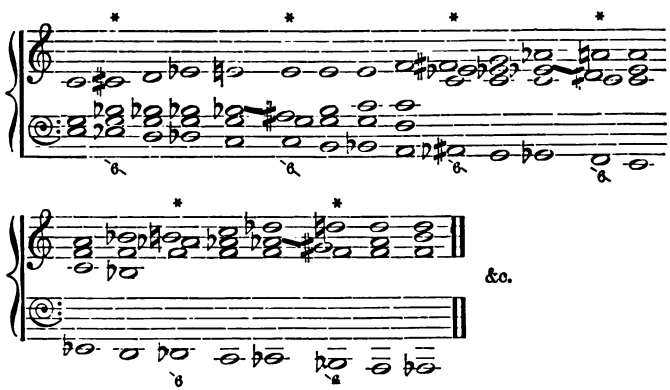


Besides, this chord can be used in the following positions:—



In all these positions the minor third of the resolution may be used instead of the major, but it is harsh, and not to be recommended.
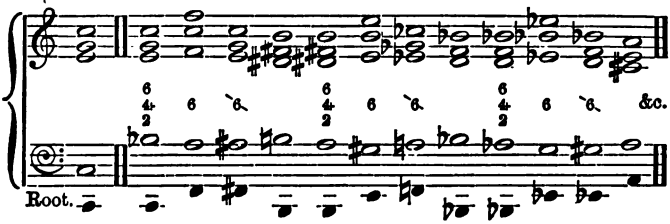
3. The great use and power of this chord cannot be better shown than in the following sequence:—
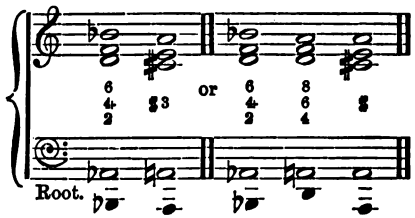


In this example the sign * shows where the chord of the extreme sharp sixth is used, and the connecting ⁀ will show the manner in which the enharmonic principle is introduced.

By carrying out this chromatic sequence, each sound on an organ or pianoforte may be correctly harmonised.

4. Another use of this chord will be found effective, if not over wrought.



5 In using this chord, the greatest care must be taken in writing it correctly, and not mixing it up with the chord of the dominant seventh, to which in sound it has such a great similarity. Such a notation as the following is quite incorrect.



The root of the discord being B♭, the resolution to G is absolutely necessary. This is only another proof to be added to the many already given, that A♭ and G♯ are not the same sounds.

6. Like the major ninth, with the minor third of its root, this chord is very rarely used by composers before
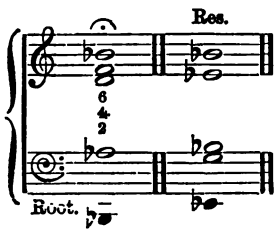
Beethoven,* but a most remarkable employment of it may found in the close of Sebastian Bach's "Crucifixus," in his Mass in B Minor—a work little known, but, like everything in this great author's works, most worthy of study.

CHAPTER III.

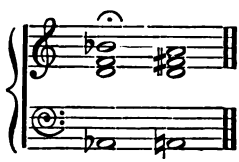
ON SUSPENSIONS AND TONIC CHORDS FORMED ON DOMINANT SOUNDS, AND THE USE OF THE PEDAL BASS.

1. A *Suspension* is formed by retaining a sound previously heard as a concord to another sound, through which it becomes a discord, and resolving it to a concord.

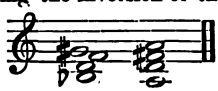
* With the greatest possible respect and reverence, it will be interesting to refer to a passage in which even Beethoven has used an A♭ which, strictly speaking, should be G♯. It will be found in the Symphony No. 2, in D, and occurs on a chord with a pause, towards the end of the last movement. The chord is:—
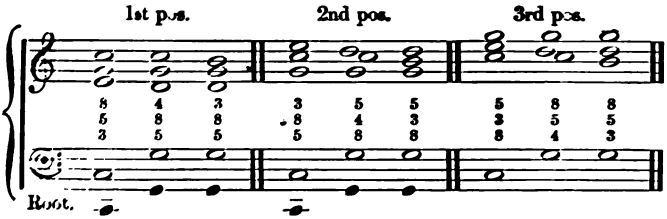


and the resolution in the Symphony is:



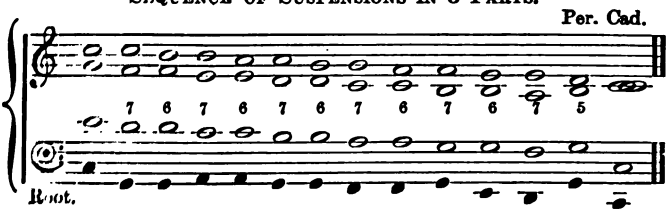
It is quite clear that this chord $\frac{6}{4}_{2}$ should resolve itself to G, and that the chord should have G♯ for its lowest sound, and then proceed to A♮, forming the inversion of this extreme sharp sixth, the direct form being



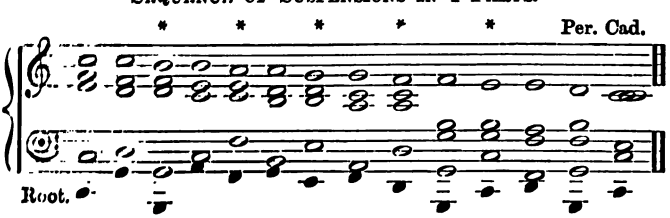


The roots of suspensions are always found in the resolution. In the above examples, the dominant sound of G is the root of the chord in the percussion. Suspensions can be formed on all sounds of the scale, but they must invariably be formed on discords, for a concord prepares, but cannot be a component part of a suspension.
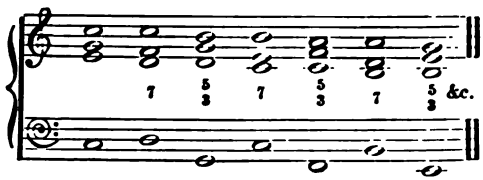
SEQUENCE OF SUSPENSIONS IN 3 PARTS.



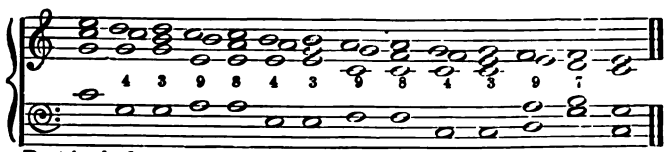
SEQUENCE OF SUSPENSIONS IN 4 PARTS.



The sevenths (*) in this example are an effective illustration of a licence, but it does not effect their roots. In strict rule, the third of the harmony should rise to the octave of the root of the resolution.
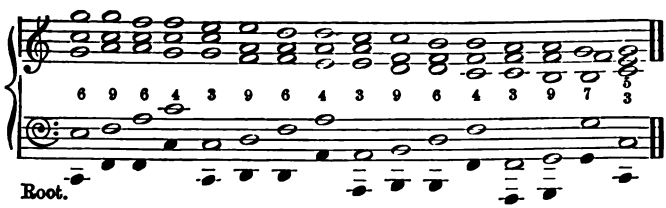


SEQUENCE OF SUSPENSIONS OF 4—3 AND 9—8.
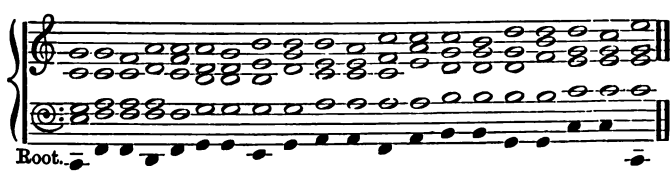


Root in the lowest sound.
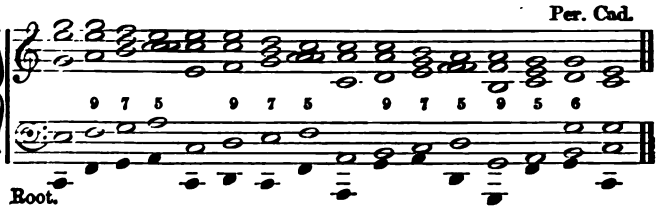
SEQUENCE OF SUSPENSIONS 9—6, 4—3.
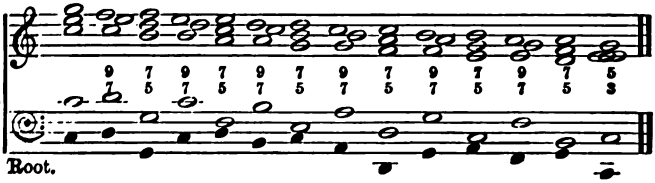


SEQUENCE OF SUSPENSIONS 9—8, 6.



An effective sequence of suspension can be produced by the chord of the major ninth followed (by licence) with the dominant seventh, or the first inversion of the major ninth, and resolved to the relative minor and supertonic.



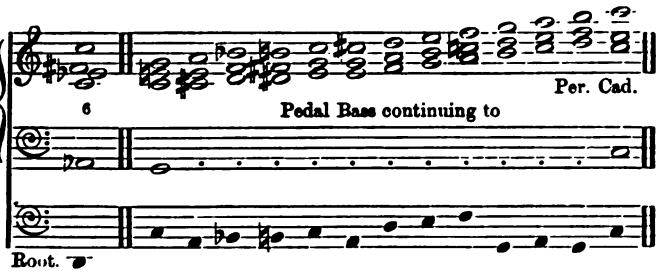
Double Suspensions can be effectively used, in instrumental music especially, and are extensively employed by modern composers.



2. The above examples sufficiently show the nature and formation of suspensions. In the chapter on Modulation, further references will be made to the subject; but as in a certain sense, all discords are chords of suspension, a reference to Part II., Chapter II. will further explain the theory on this point.
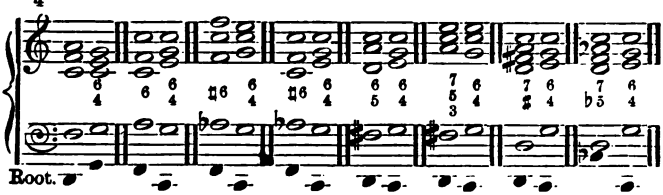
3. *The use of the Pedal Bass.*—Any dominant, or tonic root, may receive in its lowest sound, a series of tonic chords, by which their roots are not altered, but by which a most effective harmonic progression is secured, and which is mainly used as an extension of the perfect cadence.

This pedal bass must always commence on the chord of the $^{6}_{4}$, or second inversion of the triad, which is best prepared by the extreme sharp sixth, on the sound A♭, in the normal triad of C.
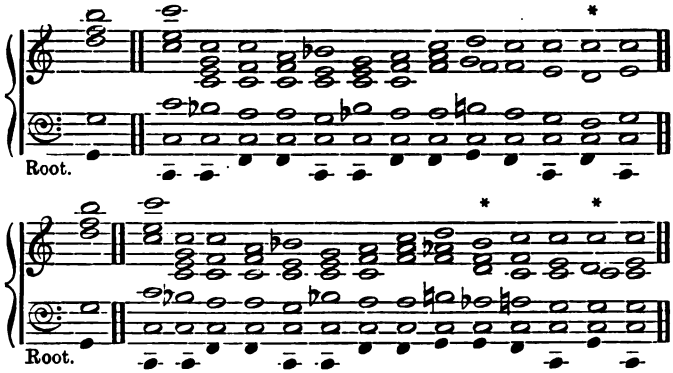


This example, partly chromatic, and partly diatonic, shows the construction of a pedal bass, which is chiefly used, as has been said, to elaborate and prolong the arrival at the perfect cadence, and gives a grand opportunity to a composer to develop a thema (particularly in fugal forms) of his work.

4. It is by no means imperative that the preparation of this bass be made on the extreme sharp sixth, or indeed on a discord or its inversion at all. Here are some other methods; but one rule is absolute—no pedal bass can commence without the second inversion of the tonic triad or $\frac{6}{4}$.

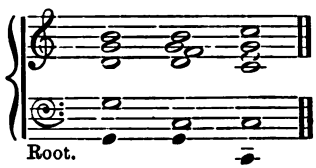


5. When in a pedal bass the perfect cadence has been reached, and the composer is unwilling to end his work, another pedal bass may be added, by the use of the *Plagal* or *Church Cadence;* but no return to the dominant harmony, with the root as the lowest sound, is admissible, though the dominant chord may be used with the tonic root.

CLOSE OF PERFECT CADENCE WITH DOMINANT ROOT.



6. A dominant harmony may receive a tonical bass by the perfect cadence.



CHAPTER IV.

ON MODULATION.

1. Modulation is, as has been stated, the art of proceeding from, and connecting the normal triad of C, with its eleven transpositions, and thereby making, or, as it is generally termed, composing music.

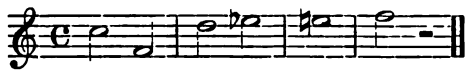
This is not a work on composition, and is not to be considered as such. In fact it is utterly impossible to teach composition.

* Dominant harmonies on tonic roots, or the Plagal Cadence extended.

A father once brought his son to Mozart, and, offering him a large sum of money, requested the great musician to teach the boy to compose. "Pardon me," said the author of the *Requiem*, "I can instruct him in the rules of Harmony and Counterpoint, but God alone can teach him to compose." If the term composition is merely to mean the putting of sounds together, as a type-setter is said to compose, then certainly in this sense composition can be taught; but by general consent, this word has a wider signification—the word, besides implying knowledge of rules, means also the gift of Melody—one which cannot be taught.

I have often thought how that time has been wasted by many theorists, who teach that "a given sound falling a fifth, and that again rising a sixth, followed by a diatonic semitone, which shall rise a chromatic semitone, and followed, ascending, by another diatonic semitone, forms a part of a melody" is a receipt for composing one.

The theorists attempt what is impossible.



This succession of intervals is certainly a tuneful progression, but a whole composition founded on such a plan, would be a very dull affair.
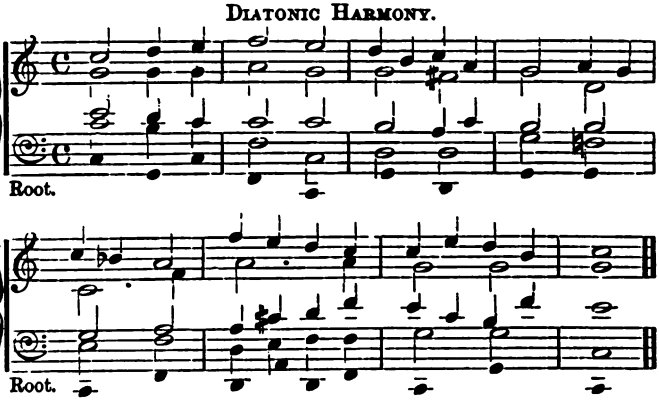
Therefore, any rules as to the creation of Melody are useless. Melody is as much an inspiration as a poem—but it has to be clothed with Harmony, and the combination of the two is Music. The materials for the clothing are found in the foregoing pages. Like the few bits of coloured glass which make the kaleidoscope, the six sounds which form theoretically the whole of music, being shaken up as it were, and inverted and transformed, now forming chords of wonderful strength, now producing the softest

and most gentle effects, all derived from one source, form that great boon which places its recipient in possession of a power which is worth great riches. An Orpheus soothing the "savage breast" is as great in his way as an Alexander conquering kingdoms.
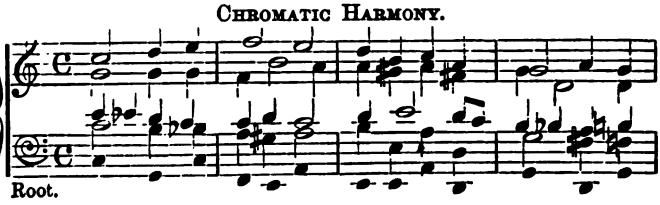
2. But—leaving a digression, only indulged in for the purpose of giving some relief to a subject which is rather dry—if composition cannot be taught, a few remarks about modulation will not be out of place, more by way of advice than as any intention of laying down imperative rules, which do not and cannot exist.
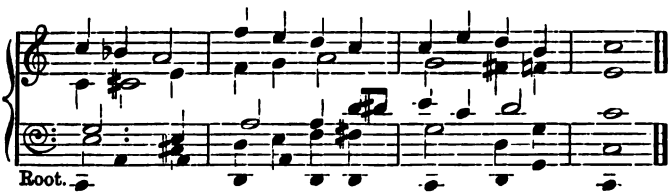
Modulation may be divided, like the semitones, into two classes: Diatonic and Chromatic. Now let us take a simple melodic form and harmonise it in both ways.

DIATONIC HARMONY.



CHROMATIC HARMONY.





3. In the outset of his career, the student will certainly adopt one or the other of these methods, diatonic, or chromatic, as the foundation of his style of composition. It is difficult to give any decided advice upon such a point, but a judicious mixture of both diatonic and chromatic modulations will be found the most useful. Handel was essentially a diatonic writer, and in his greatest works the colossal effects produced are the result of the use of diatonic means. Let the "Hallelujah Chorus" in *The Messiah*, the most stupendous monument of genius ever raised by a great man to his own immortality, be carefully examined, and it will be found to consist entirely of diatonic chords; but that Handel confined himself to these in all his works cannot be said, and his using chromatic as well as diatonic intervals, is a proof that he mixed the two systems, in the manner recommended above. Two instances out of the many, I will point out. The beautiful descriptive chorus, "They loathed to drink of the waters," in *Israel in Egypt*, and a most wonderful effect of a major ninth in its direct form, in the chorus, "Behold the Lamb of God," a few bars from the end, are sufficient to show my meaning.

John Sebastian Bach, whose name can hardly be written without the highest reverence, also combined the two systems; but his wonderful gift of harmony, united with the purest and most lovely melody (such as no other man before or since his time has possessed), sometimes seems to

lean more to the chromatic than the diatonic systems. Amongst his works I would especially name the collection of 340 *Chorales, collected from his Oratorios and Church Music*, as a most valuable epitome of Sebastian Bach's style and method of harmonic workmanship.

Haydn, Mozart, Beethoven, Weber, and Mendelssohn, in all their works, combine the two systems of diatonic and chromatic modulations. Indeed among modern composers there is only one great man who most undoubtedly has nailed his colours to the mast of the chromatic system—Spohr. So exceedingly chromatic are all Spohr's works, that he has evidently made the minor ninth and its inversions the dearest object of his musical affections—indeed his use of discords almost amounts to mannerism, and on many of his hearers has a cloying effect which to some extent satiates. "Study Spohr, and admire his works, but do not imitate them," was the advice given by Mendelssohn thirty years ago, to a young student at Leipzig who was "Spohr-struck," and had written a work full of chromatic modulations.

4. A new word has lately arisen among theorists, which has its use in the explanation of modulation. In the German language it is "Tonverwandschaft"—in English "tonal affinity," or the connection of chords with each other.

This "tonal affinity," to a great extent, has been already explained in the second part of this work. In Part II., Chap. I., paragraph 7, the connection of triads with each transposition of the normal scale is foreshadowed, and is the groundwork of "tonal affinity."

A few words on its extension will be useful before concluding this chapter.

5. The sound called C

is the Keynote of the Triad of C,
is the Keynote of the Dominant of F,
is the Keynote of the Subdominant of G,
and is the Keynote of the Relative Minor of E♭.

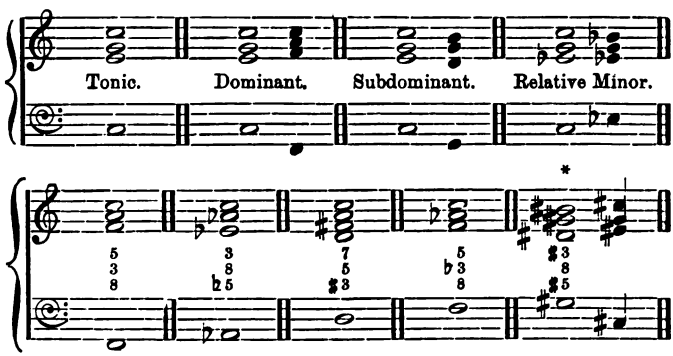
Besides these foundation triads,

C is the Fifth of the Triad of F,
the Third of the Triad of A♭,
the Dominant Seventh of D,
the Fifth of the Triad of F minor;

and, finally, C enharmonically used (putting acoustics aside) becomes B♯, which is the sharp seventh, or leading note of the transposition to C♯, when it leaves the normal triad, and continues its usefulness on another sound.

6. Now, considering that all other sounds contained between the octave C to C have similar transposed triads as those of C, the best explanation of tonal affinity is reached

The following example of the above triads will illustrate this better than words.



6. Let the above example be carried out by the writing of these chords in the eleven transpositions of the normal triad, and through the enharmonic change of the last chord (*),

the relationship of each transposition with that next following will be clearly established.

7. With these short remarks, the subject of Modulation may be closed. It is one that really has little, or no place, in a work solely intended as an explanation of Harmony; it is also one that so entirely depends on the will and taste of a composer, that when he has mastered the Theory of Sound, when he has received a thorough knowledge of the Triad, its inversions, additions, transpositions, and suspensions, he has gained the groundwork of all music, and can be left to himself to raise the superstructure.

CHAPTER V.

ON THE PROPER USE OF THIS TEXT-BOOK.—CONCLUSION.

Having now finished the theory of Harmony, my task is done, and it only remains to point out a few ways in which the use of the various points in my work may be profitably made available to students.

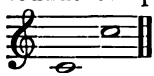
I would advise them thoroughly to master the knowledge of intervals, and of the scale, before proceeding to the actual study of Harmony.

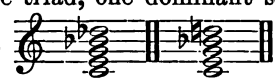
As the various intervals are only written and calculated from the normal sound C, all the intervals commencing on the transposed sounds should be written out, great care being taken that each interval contains the proper number of diatonic and chromatic semitones, as contained in the table provided.

As the normal scale, major and minor, with all its transpositions are fully written out, in order to show the identical construction of each, there is nothing more on this subject to be written: but all students should be careful to

retain a complete knowledge of this construction and to be convinced that there is only one scale in the theory of Harmony.

With regard to the triad, and its additions, transpositions, inversions, cadences, and all the examples belonging to this study, as all these examples are written solely in the normal scale of C, I would strongly urge my readers to transpose each, and every one of these examples, into all sounds comprised within the limits of the octave C to C,

 This transposition should include especially the discords of the major and minor ninth, and all the examples given in the chapter relating to those discords.

Having accomplished this, let the students take any piece of music (the more difficult the better, and the more chromatic the better), say, Spohr's *Last Judgment*, Bach's *St. Matthew Passion Music*, Wagner's *Lohengrin*, Haydn's Introduction to the *Creation*,—in fact any composition they please; let them reduce the sounds to plain chords, figure these according to the intervals they produce, find out the roots according to the directions I have given, and they will then arrive at the certainty that one scale, one triad, one dominant seventh, one major or minor ninth,  or six sounds, constitute the whole system of Harmony, which, with its twin sister Melody, is Music. With this principle I began my work—with this principle I end it, in the sincere hope that all who study it may derive the same pleasure, and advantage, that I feel I have had in its composition.

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